DHANALAKSHMI SRINIVASAN INSTITUTE OF MEDICAL SCIENCES AND HOSPITAL

Perambalur, Tamil Nadu

UNDERGRADUATE MEDICAL EDUCATION

CURRICULUM

Competency Based Medical Education (CBME) Curriculum 2024

As issued by the National Medical Commission (NMC), Government of India
Under Graduate Medical Education Board (UGMEB)
Circular No. D-11011/500/2024-Academic Cell dated 12-09-2024

The following pages reproduce the NMC document without alteration.

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Government of India
National Medical Commission

Sector-8, Dwarka
New Delhi-110075
12-09-2024

Subject: Guidelines for Competency Based Medical Education (CBME) Curriculum 2024– regarding

The revised guidelines for Competency Based Medical Education (CBME) Curriculum 2024 by the Under Graduate Medical Education Board (UGMEB) is enclosed herewith. All concerned stakeholders are requested to kindly take note of the same.

Encl.: As above

Signed by B Srinivas
Date: 12-09-2024 14:52:16

DR B SRINIVAS
SECRETARY

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Azadi Ka Amrit Mahotsav

राष्ट्रीय आयुर्विज्ञान आयोग
National Medical Commission
Academic Cell
Undergraduate Medical Education Board

No.D-11011/500/2024/AC **New Delhi, dated the 12/09/2024**

Subject: Revised Competency Based Medical Education Curriculum (CBME) Guidelines, 2024 - National Medical Commission.

In response to the various queries raised by stakeholders in respect to the Disability Guidelines (Annexure-14) mentioned in the CBME Guidelines, 2024 and other issues raised in respect of Topics and Competencies of various departments mentioned in the Guidelines, all the requisite addition/deletion has been carried out after due consultation with the experts of each Subject group.

2. Accordingly, Under Graduate Medical Education Board in exercise of powers conferred by the National Medical Commission Act, 2019 particularly by sections 10, 24, 25 and 57 of the NMC Act, publishes the Modified Competency Based Medical Education Guidelines, 2024 along with CBME Topics and Competencies Volume-I, II and III.

3. These guidelines will supersede the earlier Guidelines issued by Undergraduate Medical Education Board (UGMEB) and will be implemented from the MBBS batch of 2024-25 onwards.

Avanikar

(Aruna V. Vanikar)
President (UGMEB)

COMPETENCY BASED MEDICAL EDUCATION (CBME) CURRICULUM 2024

1. Preamble

The new Graduate Medical Education Regulations (GMER) attempt to stand on the shoulders of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to prepare the learner to provide health care to the evolving needs of the nation and the world.

Following the Regulations on Graduate Medical Education (GMER) 1997, a new crisp 'avatar' in the form of GMER 2023 was placed last year. Since five years are completed after implementation of CBME it was time to have a relook at all aspects of the various components in the existing regulations and guidelines, and adapt them to the changing demography, socio-economic context, perceptions, values, advancements in medical education and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration.

The thrust in the new guidelines is put on continuation and evolution of medical education based on feedback and experience of CBME in the last 5 years since its inception in 2019, making it more learner-centric, patient-centric, gender- sensitive, outcome-oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using "broad competencies"; instead, the reports have written end of phase subject competencies. These "competencies" can be mapped to the global competencies in the Graduate Medical Education Regulations.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated time in curriculum in the form of a longitudinal program titled 'AETCOM' based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought,

socioeconomic position and gender.

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed. The first contact physician needs to be skillful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

3. National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

a) Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.
b) Learn key aspects of National policies on health and devote himself to its practical implementation.
c) Achieve competence in the practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
e) Become an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

4. Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should be competent in diagnosis and management of common health problems of the individual

and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

a. Be competent for working in the health care team from Phase 1 MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

b. Be competent to practice preventive, promotive, curative, palliative and rehabilitative· medicine in respect to the commonly encountered health problems.

c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential medicines" and their common adverse effects.

d. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

e. Possess the attitude for continued self-learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

f. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

    i) Family Welfare and Maternal and Child Health (MCH);

    ii) Sanitation and water supply;

    iii) Prevention and control of communicable and non-communicable diseases;

    iv) Immunization;

    v) Health Education and advocacy;

    vi) Indian Public Health Standards (IPHS) at various level of service delivery;

vii) Bio-medical waste disposal;

viii) Organizational and or institutional arrangements.

g. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counseling.

h. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures with maximum community participation.

i. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

j. Be competent to work in a variety of health care settings.

k. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

5. Goals for the Learner

In order to fulfill these goals, the Indian Medical Graduate must be able to function in the following Roles appropriately and effectively:-

a. **Clinician** who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

b. **Leader** and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.

c. **Communicate with patients**, families, colleagues, and community in a methodological and skillful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

d. **Lifelong learner** committed to continuous improvement of skills and knowledge.

e. **Professional**, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession and society. Training of humanities and social sciences will be useful for this training.

f. **Critical Thinker** who demonstrates problem solving skills in professional practice

g. **Researcher** who generates and interprets evidence to ensure effective patient care as well as contribute in the field of medical research and practice.

6. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfill the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

a. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.
- Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease

identification, disease prevention and health promotion.

- Demonstrate ability to elicit and record from the patient, and other relevant sources. including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that confirm to established national and regional health programmers and policies for the following:
    - Disease prevention,
    - Health promotion and cure,
    - Pain and distress alleviation, and
    - Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,
- Demonstrate ability to appropriately identify and refer patients who may require·

specialized or advanced tertiary care.

- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

b. Leader and member of the health care team and system

- Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings. Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- Recognize and advocate health. promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

c. Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a language that they understand and in a manner that will be mutually satisfying and beneficial to them as well as care givers cum learners to yield positive health care outcomes.
- Demonstrate ability to establish professional relationships with patients, families,

colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

- Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making and overcoming hesitancy towards health initiatives.

d. Lifelong learner committed to continuous improvement of skills and knowledge

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning. Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

e. Professional who is committed to excellence, is ethical, responsive and accountable to patients, the profession and community.

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.
- Demonstrate commitment to the growth of the medical profession as a whole.

f. Critical Thinker who demonstrates problem solving skills in professional practice

- Perceive, analyse, synthesise and evaluate information obtained through observation, experience and communication that leads to rational clinical decision.
- Evaluate the credibility of information resources.
- Adequately consider the social, cultural and geographical diversity while practicing personalized medicine
- Develop independence of thought, clarity, integrity and self confidence in decision making.

g. Researcher who generates and interprets evidence to ensure effective patient care as well as contribute in the field of medical research and practice.

- Read, review, appraise and critique the scientific body of literature for practice of Evidence Based Medicine.
- Apply methodological approach to scientific enquiry for generating evidence.
- Demonstrate basic principles and ethical implications of research governance.

A. CURRICULUM (subject wise competencies are given in Competency Based Undergraduate Curriculum 2024 on NMC website)

- **Phase 1 :**

1. ANATOMY

Subject Goals:

At the end of anatomy teaching, a student should be able to demonstrate:

i. Comprehension of normal structure, development and genetic pattern of organ and organ systems, as well as the clinical correlation of structures involved in diseases and its anatomical basis.

ii. Comprehension of the normal disposition, clinically relevant inter-relationships, functional and cross -sectional Anatomy of the various organs and structures of the body.

iii. Identification of the microscopic structure of various organs and tissues with the functions, as a prerequisite for understanding the altered state in various disease processes.

iv. Basic principles and sequential development of the organs and systems; recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards.

v. Principles of karyotyping and identify the gross congenital anomalies.

vi. Principles of newer imaging techniques and interpretation of CT scan, sonogram, MRI & Angiography.

2. PHYSIOLOGY

Subject Goals:

At the end of physiology teaching, the learner must be able to:

i. Demonstrate knowledge of normal human physiology, organizational and functional relationship between cells, tissues and organs and body systems, age and sex related physiological changes in the organ functions that reflect normal growth and development.

ii. Explain physiological variations (Genotype/Phenotype) with healthy ageing through the course of life i.e. fetal, neonatal, childhood, adolescence and adulthood and demonstrate understanding of the physiological responses and adaptation to environment and exercise.

iii. Perform experiments to demonstrate physiological phenomenon and principles, interpret investigation results falling within the scope of physiology.

iv. Apply principles of Physiology in clinicopathological conditions, diagnosis, investigations and management of diseased conditions.

v. Conduct physical examination (general and system based) of normal subject in real or simulated conditions and demonstrate understanding of altered findings in physical examination of diseased conditions.

3. BIOCHEMISTRY

Subject Goals:

The learner after teaching learning in Biochemistry should be able to:

i. Understand and explain Biochemical and molecular processes involved in health and disease.

ii. Enlist and describe the cell organelles with their molecular and functional organization.

iii. Understand basic enzymology and emphasize on its clinical applications wherein regulation of enzymatic activity is disturbed.

iv. Describe Importance of nutrition in health and disease.

v. Describe digestion and assimilation of nutrients and consequences of malnutrition.

vi. Describe function and interrelationships of various biomolecules and consequences of deviation from the normal.

vii. Describe and integrate metabolic pathways of various biomolecules with their regulatory mechanisms relevant to clinical conditions.

viii. Describe Biochemical basis and rationale of clinical laboratory tests, Perform biochemical analytical tests relevant to clinical screening and diagnosis using conventional techniques / instruments and interpret investigative data.

ix. Explain the biochemical basis of inherited disorders with their associated

sequel.

x. Describe mechanisms involved in maintenance of water, electrolyte and acid base balance and consequences of their imbalances.

xi. Outline basics genetics, explain the molecular mechanisms of gene expression and regulation, basic principles of biotechnology and latest techniques and their applications in medicine.

xii. Demonstrate the skills of solving scientific and clinical problems and decision making.

- **Phase 2 :**

4. PATHOLOGY

Subject Goals:

At the end of the teaching learning in pathology learner should be able to:

i. Demonstrate knowledge of causes, mechanisms, alterations in gross and cellular morphology of organs in disease states.

ii. Explain, interpret and analyse the pathology with clinical condition including diseases which are locally and regionally relevant.

iii. Perform experiments to demonstrate routine pathological investigations on blood and explain principles, interpret investigation results.

iv. Perform experiments to demonstrate routine pathological investigations on the various biological samples and explain principles, interpret investigation results.

v. Demonstrate updated pathological investigations on the various biological samples.

5. MICROBIOLOGY

Subject goals

At the end of Microbiology teaching-learning activities learner should be able to:

i. Comprehend the immunological mechanisms in health and disease.

ii. Comprehend the of role of microbial agents in health and disease.

iii. Correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents.

iv. Comprehend the principles and application of infection control measures.

v. Comprehend the basis of choice of laboratory diagnostic tests and their interpretation.

vi. Comprehend the principles of antimicrobial therapy and the control and prevention of infectious diseases.

vii. Comprehend the mechanisms of antimicrobial resistance (AMR) and its prevention along with concept and application of the antimicrobial stewardship program.

viii. Demonstrate the knowledge of outbreak investigation and its control.

ix. Describe commensals, opportunistic and pathogenic organisms and explain host parasite relationship.

x. Describe the characteristics (morphology, cultural characteristics, resistance, virulence factors, incubation period, mode of transmission etc.) of different microorganisms.

xi. Explain the various defense mechanisms of the host against the microorganisms which can cause human infection.

xii. Describe the laboratory diagnosis of microorganisms causing human infections and disease.

xiii. Describe the prophylaxis for the particular infecting microorganisms.

xiv. Operate routine and sophisticated instruments in the laboratory.

xv. Demonstrate respect for patient samples, confidentiality pertaining to patient identity in laboratory results and effective communication skills in patient care.

6. PHARMACOLOGY

Subject Goals:

At the end of teaching learning in pharmacology, the student should be able to:

i. Know about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics.

ii. Apply pharmacokinetic and pharmacodynamic concept of drugs to drug selection and dosage regimens.

iii. Explain mechanism of action of commonly used drugs.

iv. Select and rationally prescribe drugs based on clinical condition and the pharmacologic properties, efficacy, safety and cost of medicines for common clinical conditions of national importance.

v. Understand generic, branded, over the counter (OTC) and prescription only drugs.

vi. Understand pharmacovigilance and identify adverse drug reactions and drug interactions of commonly used drugs.

vii. Understand essential medicine concept and explore sources of drug information.

viii. Administer drugs through various common routes of administration.

ix. Understand and apply concept of evidence based medicine and rational use of drugs.

x. Communicate well in imparting drug related information to patients.

xi. Knows basics of new drug delivery and industry-doctor relationship.

xii. Critically analyze drug promotional literature and drug formulations.

xiii. Understand regulatory and ethical aspects of drug discovery and drug use.

- **PHASE III PART I**

7. FORENSIC MEDICINE AND TOXICOLOGY

Subject Goals:

At the end of teaching learning in forensic medicine and toxicology, the student should be able to:

i. Comprehend Medico-legal responsibilities of a general physician while rendering community service either in a rural primary health center or an urban health center.

ii. Comprehend of basic Medico-legal aspects of hospital and general practice.

iii. Understand the rational approach to the investigation of crime, based on scientific and legal principles.

iv. Understand the medico-legal framework of medical practice, codes of conduct, medical ethics, Professional Misconduct and Medical Negligence.

v. Conduct Medico-legal examination and documentation of various Medico-legal cases. Identify and interpret important post-mortem findings in common unnatural deaths.

vi. Conduct postmortem examination and Preparation of postmortem reports in unnatural deaths- Suicidal, Homicidal, Accidental.

vii. Prepare Medical Certificate of Cause of Death (MCCD) and Medico-legal reports of injuries and age estimation.

viii. Conduct examination and documentation of sexual offences, intoxication cases and preservation of relevant ancillary materials for medico-legal examination.

ix. Analyse, Diagnose, manage legal aspects of common acute and chronic poisoning cases.

x. Understand of latest Acts and laws related to medical professional including related Court judgements e.g. MTP Act, CPA, HOTA etc.

8. COMMUNITY MEDICINE

Subject Goals:

At the end of teaching learning in Community Medicine, the student should be able to:

i. Demonstrate understanding of role of primary care physician for preventive, promotive, curative, rehabilitative, palliative care & referral services.

ii. Demonstrate understanding of the concept of health and disease, demography, population dynamics and disease burden in National and global context, comprehension of principles of health economics and hospital management.

iii. Apply the understanding of physical, social, psychological, economic and environmental determinants of health and disease, ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,

iv. Ability to implement and monitor National Health Programmes in the primary care setting.

v. Ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.

vi. Apply understanding the role of nutrition in health promotion and disease prevention.

vii. Demonstrate role of researcher & community medicine physician by understanding the concepts of various epidemiological study designs and their application and epidemiology of diseases and ability to critically review.

viii. Demonstrate understanding of pandemic and epidemic situations with emerging and re-emerging diseases and able to investigate under supervision and plan, advise and promote preventive aspects as per international and national health

regulations and programs.

ix. Demonstrate understanding of all principles of public health, community medicine, preventive aspects, social aspects utilizing family adoption program , providing services to the families adopted and being first care physician under the guidance of mentor.

x. Apply the principles of behaviour change communication for improving health related aspects for communicable, non-communicable diseases, health promotive aspects, related to addictions, health related information and misinformation.

9. OTO-RHINOLARYNGOLOGY (ENT)

Subject Goals:

At the end of training in ENT, the learner should be able to:

i. Demonstrate knowledge of the common Otorhinolaryngological (ENT) emergencies and problems.

ii. Recognize, diagnose and manage common ENT emergencies and problems in primary care setting.

iii. Perform simple ENT procedures as applicable in a primary care setting.

iv. Recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.

v. Communicate to patients in respectful non-threatening non-judgmental empathetic manner appropriately

vi. Identify, discuss and defend medicolegal socio cultural and ethical issues as they pertain to consent for ENT surgical procedures and address patients queries in patient undergoing a basic ENT surgical procedure in a simulated environment.

10. OPHTHALMOLOGY

Subject Goals:

The student after teaching / learning in Ophthalmology should be able to:

i. Demonstrate knowledge of common eye disease in the community and the ability to diagnose and manage the common eye disease in primary care set up.

ii. Recognize diagnose and manage (primary management) of ocular emergencies in primary care setting and have knowledge of the indication for their referral.

iii. Demonstrate knowledge about various cause of blindness and visual impairment in the community.

iv. Demonstrate knowledge about various national programs for the control of blindness in the community and their implementation in the primary care setting.

v. Demonstrate knowledge about common Ocular drugs, their mechanism of action, their pharmaceutical, indications dosage schedule, side effects and complications.

vi. Demonstrate knowledge about common ocular surgeries, their indication and counselling regarding various ocular procedures and indications for referral from primary care setting.

vii. Demonstrate knowledge about eye donations, eye transplantation and eye bank.

viii. Perform simple ocular procedures as applicable in primary care setting.

ix. Be a team member of national program for control of blindness.

x. Have good rapport with public, colleagues, superiors and subordinates.

xi. Counsel patients and their families regarding various ocular conditions, management, indication for referral.

xii. Counsel the blind and visually impaired patients regarding their Rehabilitation.

- **Phase III PART** - II

11. GENERAL MEDICINE

Subject Goals:

At the end of training learning in general medicine, the learner should be able to:

i. Demonstrate understanding of the pathophysiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management.

ii. Competently interview and examine an adult patient and make a clinical diagnosis.

iii. Appropriately order and interpret laboratory tests.

iv. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures.

v. Follow up of patients with medical problems and refer whenever required.

vi. Communicate effectively, educate and counsel the patient and family.

vii. Manage common medical emergencies and refer when required.

viii. Independently perform common medical procedures safely and understand patient safety issues.

ix. Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.

x. Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra- indications.

xi. Propose diagnostic and investigative procedures and ability to interpret them.

xii. Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.

xiii. Recognize geriatric disorders and their management.

xiv. Develop clinical skills (history taking. clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies;

xv. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.

xvi. Perform simple routine investigations like hemogram, stool, urine, sputum and biological fluid examinations.

xvii. Assist the common bedside investigative procedure like pleural tap, Lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

12. PEDIATRICS

Subject Goals:

At end of training on pediatrics, the student should be able to:

i. Assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal.

ii. Recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate.

iii. Perform procedures as indicated for children of all ages in the primary care setting.

iv. Recognize children with special needs and refer appropriately.

v. Promote health and prevent diseases in children.

vi. Participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy.

vii. Communicate appropriately and effectively.

viii. Describe the normal Growth and Development during fetal life, Neonatal period, Childhood and Adolescence and the deviations thereof.

ix. Describe the common Pediatric disorders and emergencies in terms of Epidemiology, Etiopathogenesis, Clinical manifestations, Diagnosis and also describe the rational therapy and rehabilitation services.

x. Workout age related requirements of calories, nutrients, fluids, dosages of drugs etc. in health and disease.

xi. Describe preventive strategies for common infectious disorders, Malnutrition, Genetic and Metabolic disorders, Poisonings, Accidents and Child abuse.

xii. Outline national programs related to child health including Immunization programs.

xiii. Take detailed Pediatric and Neonatal history and conduct an appropriate physical examination of children and neonates, make clinical diagnosis, conduct common.

xiv. Bedside investigative procedures, interpret common laboratory investigations, plan and institute therapy.

xv. Take anthropometric measurements, resuscitate newborn, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current National programs, perform venesection, start intravenous fluids and provide nasogastric feeding.

xvi. Demonstrat knowledge about all steps of the diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural and ascitic tap.

xvii. Distinguish between normal Newborn babies and those requiring special care and institute early care to all newborn babies including care of preterm and low birth weight babies, provide correct guidance and counseling about Breast feeding and Complementary feeding.

xviii. Provide ambulatory care to all not so sick children, identify indications for specialized/ inpatient care and ensure timely referral to those who require hospitalization.

13. DERMATOLOGY, VENEREOLOGY AND LEPROSY

Subject Goals:

At the end of training, the learner should be able to:

i. Demonstrate understanding of the principles of diagnosis of diseases of the skin,

hair, nail and mucosa.

ii. Recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate.

iii. Learn a syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities.

iv. Recognize and treat emergencies including drug reactions and refer as appropriate.

v. Counsel and provide patient education on safe sexual behaviors/ disease prevention/ prognosis including pretest counseling for HIV.

14. PSYCHIATRY

Subject Goals:

At the end of training, the learner should be able to:

i. Promote mental health and mental hygiene.

ii. Identify clinical features, make diagnosis and manage common psychiatric disorders across all ages.

iii. Identify and manage psychotic disorders, mainly schizophrenia.

iv. Identify and manage stress related psychiatric disorders, institute preliminary treatment in disorders difficult to manage, and refer appropriately.

v. Identify alcohol/ substance abuse disorders and refer them to appropriate centers.

vi. Assess the risk for suicide and refer appropriately.

15. GENERAL SURGERY

Subject Goals:

At the end of training in general surgery, the student should be able to:

i. Demonstrate understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children.

ii. Choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition.

iii. Apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice.

iv. Demonstrate knowledge about common malignancies in India and their prevention, early detection and therapy.

v. Perform common diagnostic and surgical procedures at the primary care level.

vi. Demonstrate knowledge about organ retrieval from deceased donor and living donor.

vii. Administer informed consent and counsel patient prior to surgical procedures.

viii. Describe etiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies in adult and children.

ix. Describe common malignancies in the country and their management including prevention.

x. Enumerate different types of anesthetic agents, their indications, contraindications, mode of administration, and side effects.

xi. Plan various laboratory tests for surgical conditions and interpret the results.

xii. Identify and manage patients of hemorrhagic, septicemia and other types of shock.

xiii. Recognize, resuscitate, stabilize and provide Basic Life Support to patients following trauma.

xiv. Monitor patient of head, chest, spinal and abdominal injuries, both in adults and children.

xv. Provide primary care for a patient of burns.

xvi. Acquire principles of operative surgery including preoperative, operative and post operative care and monitoring.

xvii. Treat open wound including preventive measures against tetanus and gas gangrene.

16. OBSTETRICS AND GYNAECOLOGY

Subject Goals:

At the end of training in Obstetrics and gynecology, the learner should be able to:

i. Provide preconceptional counseling and antenatal care.

ii. Identify high-risk pregnancies and refer appropriately.

iii. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings.

iv. Prescribe drugs safely and appropriately in pregnancy and lactation.

v. Diagnose complications of labor, institute primary care and refer in timely manner.

vi. Perform early neonatal resuscitation.

vii. Provide postnatal care, including education in breast-feeding.

viii. Counsel and support couples in correct choice of contraception.

ix. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient.

x. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related Acts.

xi. Elicit gynecologic history, perform appropriate physical and pelvic examinations and PAP smear in the primary care setting.

xii. Recognize, diagnose and manage common reproductive tract infections in the primary care setting.

xiii. Recognize and diagnose common genital cancers and refer them appropriately.

17. ORTHOPAEDICS

Subject Goals:

At the end of training in orthopedics, the learner should be able to:

i. Demonstrate ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral.

ii. Recognize and manage common infections of bone and joints in the primary care setting.

iii. Recognize common congenital. metabolic, neoplastic, degenerative and inflammatory bone diseases, treat and refer appropriately.

iv. Perform simple orthopedic techniques as applicable to a primary care setting.

v. Recommend rehabilitative services for common orthopedic problems across all ages.

vi. Demonstrate knowledge about the medico-legal aspects of trauma.

18. ANAESTHESIOLOGY

Subject Goals:

At the end of training in anesthesiology, the learner should be able to:

i. Explain principles of administration of general, regional and local anaesthesia including selection of cases, pre-operative evaluation, optimisation and recovery.

ii. Comprehend management of acute and chronic pain including labour analgesiaClear and maintain airway in an unconscious patient.

iii. Explain principles of oxygen therapy, select oxygen delivery devices and administer oxygen therapy judiciously.

iv. Perform cardiopulmonary resuscitation with available resources and transfer the patient to higher centre for advanced life support.

v. Comprehend the implications and obtain informed consent for various procedures and maintain the documents.

19. RADIODIAGNOSIS

Subject Goals:
At the end of training in Radiodiagnosis, the learner should be able to:

i. Make rational choice of imaging modality and imaging procedure for common diseases

ii. Exhibit mindful behaviour regarding risks associated with imaging modalities

iii. Exhibit appropriate interdisciplinary conduct and documentation

iv. Interpretation of images of normal x-rays, abnormalities in x-rays involving emergency conditions and diseases that would be treated by the primary care physician.

PHASE WISE TRAINING AND TIME DISTRIBUTION FOR PROFESSIONAL DEVELOPMENT

Subject wise competencies published in Competency Based Undergraduate Curriculum 2024 on NMC website and Attitude, Ethics and Communication (AETCOM) course available on the NMC website, shall be the curriculum for the batches admitted in MBBS from the academic year 2024-25 onwards. **Teaching learning and assessment may be carried out using bilingual mode (Assamese, Bangla, Gujarati, Hindi, Kannada, Malayalam, Marathi, Odiya, Punjabi, Tamil, and Telugu) along with English language.**

In order to ensure that training is in alignment with the goals and competencies required for a medical graduate, there shall be a **Foundation Course to** orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.

I. Training period and time distribution:

Universities shall organize admission timing and admission process in such a way that teaching in the phase I commences with induction through the Foundation Course at the beginning of academic year. There shall be no admission of students in respect of any academic session beyond dates specified for each academic year. **The Universities/ Institutions/colleges shall not register any student (in MBBS course) admitted beyond the said date.** Any student identified as having obtained admission after the last date for closure of admission shall be discharged from the course of study, or any medical qualification granted to such a student shall not be a recognized qualification by National Medical Commission.

The institution which grants admission to any student after the last date specified from the same shall also be liable to face such action as may be prescribed by National Medical Commission.

Every learner shall undergo a period of certified study extending over 4 ½ academic years, divided into four professional years from the date of commencement of course to the date of completion of examination which shall be followed by one year of compulsory rotating medical internship.

Each academic year will have at least 39 teaching weeks with a minimum of 39 hours a week.

Large group teaching shall not exceed one third of the total allotted hours for a subject. Two third of the total allotted hours shall include small group teaching, interactive sessions, practicals, clinical, small group teaching, self-directed learning and tutorials etc. The learning process shall include clinical experiences, problem- oriented approach, case studies and community health care activities.

Learner centered teaching learning methods shall include early clinical exposure, problem/case-based learning, case studies, community-oriented learning, self-directed, integrated learning, experiential learning & electives. Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension.

At the end of each professional year university examination will be conducted. If any student fails to clear the regular university examination, student will appear in supplementary examination.

Supplementary examinations and declaration of results shall be processed by universities within 6-8 weeks from the date of declaration of the results of the main examination for every professional year, so that the candidates, who pass, can join the main batch for progression.

If the student fails in the supplementary examination in phase 1 of MBBS, the student goes to the junior batch for teaching learning as well as for university examinations. There shall be no supplementary batches. If a candidate has not appeared for university examination (both theory and practical) for a subject then it shall not be counted as an attempt for that subject. Partial attendance in examination (only theory or only practical) in any subject shall be counted as an attempt. No more than four attempts shall be allowed for a candidate to pass the Phase 1 examination. The total period for successful completion of phase I course shall not exceed four (4) years. A learner shall not be entitled to graduate later than ten (10) years of her/his joining the first MBBS course (including continuous rotatory medical internship).

Phase wise details are:

- A candidate, who fails in the Phase-I examination, shall not be allowed to join the Phase-II until the candidate passes all subjects of Phase-I examination.

- A candidate who fails in the Phase-II regular/ supplementary university examination, shall be allowed to join the Phase-III Part I training, however he shall not be allowed appear for the university examination.

- A candidate who fails in the Phase III, Part-I regular/supplementary university examination, shall be allowed to join the Phase-III Part II training, however he shall not be allowed appear for the university examination.

II. The period of 4½ years is divided as follows:

i) **Phase-I of 12 months including Foundation Course of two weeks and university exams.** It shall consist of - Anatomy, Physiology, Biochemistry, Introduction to Community Medicine, Humanities, Attitude, Ethics & Communication (AETCOM) module, family adoption programme through village outreach where-in each student shall adopt minimum of three (03) families and preferably at least five (05) families, simulation-based learning, early clinical exposure, alignment & integration and pandemic module integrated.

ii) **Phase-**II **of 12 months including university exams.** It will consist of Pathology, Pharmacology, Microbiology, family visit under Community Medicine, General Surgery, General Medicine, Obstetrics & Gynecology, AETCOM module, Forensic Medicine & Toxicology, alignment & integration and introduction to clinical subjects. Family Adoption Programme through village outreach where-in each student shall continue to follow up and provide necessary services under the supervision. Pandemic module integration & simulation-based learning to be continued with increasing complexity.

The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings shall take place at the *primary level* of health care. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve: Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,

- Involvement in patient care as a team member,
- Involvement in patient management and performance of basic procedures.

iii) **Phase** III - **30 months**

a. Phase III Part I **(12 months, including University exams)**

Forensic Medicine and Toxicology, Community Medicine, Medicine & allied subjects, Ophthalmology, Otorhinolaryngology (ENT), Surgery & allied subjects, Pediatrics, Obstetrics& Gynecology, Radiodiagnosis, Anesthesiology, AETCOM, Pandemic module integration, alignment & integration and Clinical postings. Family Adoption Programme through village outreach and simulation- based learning to be continued with increasing complexity.

Electives (1 month) shall be in 2 blocks of 15 days each in Phase III part II. First 15days block starts after annual exam of Phase III MBBS part 1 and 2nd block after the end of 1st elective.

b. Phase 3 Part II (18 months, including University exam)-

Subjects include:

Medicine and allied specialties (General Medicine, Psychiatry, Dermatology, Venereology and Leprosy (DVL), Surgery and allied specialties (General Surgery, Orthopedics, Anesthesiology and Radiodiagnosis), Obstetrics and Gynecology (including Family Welfare), Pediatrics, AETCOM module, Pandemic module integration, alignment & integration and Clinical postings.

III. Distribution of teaching hours phase wise:

a Phase I, phase II and phase III- part 1 teaching hours:

Time allotted 12 months (approximately 52 weeks) out of which time available for teaching- learning: approximately 39 weeks.

(Excluded- 13 weeks: Preliminary/ University examinations and results: 9 weeks, vacations: 2 weeks, public holidays: 2 weeks)

Time distribution in weeks: 39 weeks x 39 hours = 1521 hours for Teaching-Learning.

b Phase-III Part-II, teaching hours:

Time allotted: 18 months (approx. 78 weeks)

Time available: Approx. 62 weeks (excluding 16 weeks) (39 hours/ week)

Prelim / University Exam & Results: 10 weeks

Vacation: 3 weeks

Public Holidays: 3 weeks

Time distribution in weeks: 62 x 39 hrs= 2418 hrs available for Teaching-Learning

(Clinical Postings: 15 hours/ week Phase II onwards included in academic schedule. These are attached in separate annexure with all relevant tables).

- Academic calendar is given in annexure.
- Distribution of subjects for Professional Phase-wise training is given in annexure
- Minimum teaching hours prescribed in various disciplines phase wise are given in annexures.
- Distribution and duration of clinical postings is given in annexure.

Time allotted excludes time reserved for internal /University examinations, and vacation.

Phase II clinical postings shall commence before / after declaration of results of the first professional phase examinations, as decided by the institution/ University.

Phase III part I and part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.

Note:

A total of approximately 20% of allotted time of a Phase shall be utilized for integrated teaching learning with other subjects. This will be included in the assessment of subjects.

The period of training is minimum suggested. Adjustments where required depending on availability of time may be made by the concerned college/ institution. This period of training does not include university examination period. Pandemic module teaching hours are added to respective allocated subjects and these subjects will teach as per module.

An exposure to skills lab based teaching by each subject in each phase shall be there weekly or fortnightly.

c New teaching /learning elements (Refer to booklets on NMC website related to these elements)

1) Foundation Course

Goal: The goal of the Foundation Course is to prepare a learner to study medicine effectively.

Objectives:

(a) Orient the learner to:

- The medical profession and the physician's role in society
- The MBBS programme
- Alternate health systems i.e. AYUSH in India and history of Medicine
- Medical ethics, attitudes and professionalism
- Health care system, its delivery and visits to health centers
- National health programmes and policies
- Universal precautions and vaccinations
- Patient safety and biohazard safety
- Principles of primary care(general and community based care)
- Mental Health
- The academic ambience

(b) Enable the learner to acquire enhanced skills in:

- Language
- Interpersonal relationships
- Communication emphasis on clinico-laboratory communication
- Learning including self-directed learning
- Time management
- Stress management, Mental Health
- Use of information technology, and artificial intelligence

(c) Train the learner to provide:

- First-aid
- Basic /cardiopulmonary/emergency life support

In addition to the above, learners maybe enrolled in one of the following programmes which will be run concurrently:

- Local language programme
- English language programme
- Computer skills

These may be done in the last two hours of the day. These sessions must be as interactive as possible. Sports (to be used through the Foundation Course as protected 04 hours/week). Leisure and extracurricular activity (to be used through the Foundation Course).

Institutions shall develop learning modules and identify the appropriate resource persons for their delivery. The time committed for the Foundation Course may not be used for any other curricular activity. The Foundation Course shall have a minimum of 75% attendance of all students mandatorily. This will be certified by the Principal/Dean of the college.

The Foundation Course shall be organized by the Coordinator appointed by the Principal/ Dean of the college and shall be under supervision of the Heads of MBBS phase 1departments.

Every college shall arrange for a meeting with parents/ wards of all students and records of the same shall be made available to UGMEB of NMC. Mentor- mentee program shall be carried out judiciously, with the ratio of 1 Mentor to 3 mentees. Mentor may be selected from all disciplines from the level of Professor/ HOD to Assistant Professor. Mentor shall be allotted his mentees during the foundation course itself from Phase 1. The mentee shall stay connected with the Mentor throughout his career till he completes CRMI. Each year when 3 new mentees are added from phase 1 to the mentor, the senior batch students shall support the junior students and create a healthy sibling environment.

2) Early Clinical Exposure

Objectives: The objectives of early clinical exposure of the first-year medical learners are to enable the learner to:

- Recognize the relevance of sciences basic to diagnosis, patient care and management,
- Provide a context that will enhance learning of sciences basic to clinical reasoning,
- Relate to experience of patients as a motivation to learn,
- Recognize attitude, ethics and professionalism as integral to doctor- Patient relationship,
- Understand the socio-cultural context of disease through the study of humanities.

Elements

- Phase I subject correlation: i.e. apply and correlate principles of phase I subjects as they relate to patient care (this shall be part of integrated modules as well as in routine teaching wherever relevant).

- Clinical skills: to include basic skills in interviewing patients, doctor- patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training shall be imparted in the time allotted for early clinical exposure).

- Humanities: to introduce learners to a broader understanding of the socio-economic framework and cultural context within which health is delivered through the study of humanities and social sciences.

3) Electives

Objectives: To provide the learner with opportunities:

- For diverse learning experiences.
- It is mandatory for learners to do an elective. The elective time shall not be used to make up for missed clinical postings, shortage of attendance or other purposes.
- Institutions will pre-determine the number and nature of electives, names of the supervisors, and the number of learners in each elective based on the local conditions, available resources and faculty.
- Electives on topics in areas such as Research methodology, Research ethics, Use of Artificial intelligence and computers in Health and Medical Education, Health Management, Health economics, Indian system of medicine, Medical photography /clinical photography, Global health, Evidence based medicine, Art and music, Physiotherapy, Nutrition, ethical use of technology including artificial intelligence etc. in medicine, Literary activities, etc. may be provided by the college/ institution.
- It shall be preferable that elective choices are made available to the learners in the beginning of the academic year.
- The learner must submit a learning log book based on both blocks of the electives.
- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the University MBBS examination/ (or NExT whenever it is applicable).

4) Attitude, Ethics and Communication Module (AETCOM)

Objectives of the programme: At the end of the programme, the learner must demonstrate ability to:

- Understand and apply principles of bioethics and law as they apply to medical practice and research, understand and apply the principles of clinical reasoning as they apply to the care of the patients,
- Understand and apply the principles of system-based care as they relate to the care of the patient,
- Understand and apply empathy and other human values to the care of the patient,
- Communicate effectively with patients, families, colleagues and other health care professionals,
- Understand the strengths and limitations of alternative systems of medicine,
- Respond to events and issues in a professional, considerate and humane fashion,
- Translate learning from the humanities in order to further his professional and personal growth.

Learning experiences:

- This will be a longitudinal programme spread across the continuum of the MBBS programme including internship.
- Learning experiences shall include small group discussions, patient care scenarios, self-directed learning, workshops, seminars, role plays, large/small group teaching etc.
- Application based subject oriented cases may be used as additional resources for this training and real-life case studies are the best examples for this AETCOM training. Community based case studies must be used in communication aspects of health education, informed consent and counseling in addition to clinical case studies.
- Attitude, Ethics & Communication Module (AETCOM module) developed by the erstwhile Medical Council of India should be used longitudinally for purposes of instruction.
- 75% attendance in AETCOM Module is mandatory for eligibility to appear for all

university examinations of all subjects in each Phase.

(5) **Alignment and integration (AIT) teaching**

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.

Objectives

In the earlier phases, the purpose of vertical integration (across phases) is to emphasize the applicative use of the basic science concept taught. In the later phases, its purpose is to utilise and build on prior knowledge and emphasize the foundations of clinical practice.

Learning experiences

In order to achieve this, the MBBS curriculum will become -

a) aligned to the extent possible - meaning that as much as possible topics/systems in different subjects in the same phase will be grouped together in the same weeks/months in timetable for teaching learning. The purpose of horizontal integration (within a phase) is to remove redundancy and provide interconnectedness. Suggested formats for alignment in phase 1 & 2 aregiven in annexures. Phase 3 part 1 and 2 can be aligned accordingly as needed.

b) integrated to a limited extent both vertically and horizontally.

Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). Teaching/learning occurs in each phase through study of organ systems or disease blocks in order to integrate the learning process. Clinical linker cases must be used to integrate and link learning across subjects.

The six integrated modules to be used across 4 years ½ are anemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid. The complete modules are part of documents on NMC website.

(6) Learner-doctor method of clinical training (Clinical Clerkship)

a. Goal: To provide learners with experience in:

- Longitudinal patient care,
- Being part of the health care team,
- Hands-on care of patients in outpatient and in-patient setting.

b. Structure:

- The first clinical posting in Phase II shall orient learners to the patient, their roles and the specialty.
- The learner-doctor programme shall progress as outlined in Table 9.
- The learner shall function as a part of the health care team with the following responsibilities:
- Be a part of the units' out-patient services on admission days,
- Remain with the admission unit until at least 6 PM except during designated class hours,
- Be assigned patients admitted during each admission day for whom he will undertake responsibility, under the supervision of a senior resident or faculty member,
- Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- Follow the patient's progress throughout the hospital stay until discharge,
- Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients,
- Participate in unit rounds on at least one other day of the week excluding the admission day,
- Discuss ethical and other humanitarian issues during unit rounds,
- Attend all scheduled classes and educational activities,
- Document his observations in a prescribed log book /case record.

No learner will be given independent charge of the patient in the capacity of primary physician of the concerned patient.

The supervising physician shall be responsible for all patient care decisions and guide the learner from time to time as required.

(7) Assessment:

- A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.
- The log book/ case record must include the written case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.
- The log book shall also include records of outpatients assigned. Submission of the log book/ case record to the department is required for eligibility to appear for the final examination of the subject. An e-logbook is desirable.

Assessment

I. **Eligibility to appear for Professional examinations**

The performance in essential components of training are to be assessed, based on following three components:

(a) Attendance

- There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase - the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject. There shall be a minimum of 75% attendance in AETCOM and minimum of 80% attendance in family visits under Family adoption

programme. Each student shall adopt minimum 3 families/ households and preferably five families. The details shall be as per Family Adoption Program guidelines.

- If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting.

Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination/ NExT.

b) Internal Assessment (IA): Internal assessment shall be based on day-to-day assessment. For subjects taught in more than one phase, there shall be IA in every phase in which the subject is taught.

It shall relate to different ways in which learners participate in the learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/ problem solving exercise, participation in project for health care in the community, Quiz, Certification of competencies, museum study, log books, SDL skills etc. Internal assessment should have both subjective and objective assessment. Internal assessment shall not be added to summative assessment. However, internal assessment marks in absolute marks should be displayed under a separate column in a detailed marks card.

The internal assessment marks for each subject will be out of 100 for theory and out of 100 for practical/clinical (except in General Medicine, General Surgery and Obstetrics & Gynaecology, in which theory and practical assessment will be of 200 marks each).

For subjects that teach in more than one phase, cumulative IA to be used as eligibility criteria. The final cumulative marks are to be used for eligibility. The details are:

I. General medicine: The IA of 200 marks in medicine shall be divided across phases as Phase II - 50 marks,
Phase III part 1 - 50 marks

Phase III part 2 - 100 marks.

Phase III part 2 - 100 marks is divided as

Medicine - 75 marks

Psychiatry - 13 marks

Dermatology- 12 marks.

The final cumulative IA for Medicine is out of 200 marks for theory and practical each.

II. General surgery: The IA in surgery shall be divided across phases as:

Phase II - 25 marks,

Phase III part 1 - 25 marks,

Phase III part 2 - 150 marks.

Phase III part 2 - 150 marks shall be divided as

General surgery - 75 marks,

Orthopedics -50 marks,

Anesthesia -13 marks

Radiodiagnosis - 12 marks.

The final cumulative IA for surgery is out of 200 marks for theory and practical each.

III. IA of Forensic Medicine and Toxicology is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each.

IV. IA in Community Medicine is divided as 25 marks in phase I, 25 marks in phase II, and 50 marks in Phase III- part 1. The final cumulative IA for Community Medicine is out of 100 marks for theory and practical each.

V. IA in ophthalmology and ENT is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each for each subject.

(b) Certifiable Competencies Achieved:

1. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university

examination of that subject.

2. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three theory and practical internal assessment examinations in each subject of phase 1 &II, and this mandatorily includes pre-university examination. There shall be no less than two theory and clinical examinations in each subject of Phase III part 1 & 2 and this mandatorily includes an end of posting assessment. Log book (including required skill certifications) to be assessed and marks given from 10-20% in internal assessment.
3. Learners must secure at least 50% of the total marks (combined in theory and practical / clinical; and minimum 40% in theory and practical separately) for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
4. The results of internal assessment should be intimated to students at least once in 3 months and as and when a student wants to see the results.

Remedial measures:

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

- *During the course:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented. **In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be offered remedial for the same batch supplementary exam. For attendance, he will be allowed remedial measures ONLY IF attendance is more than 60% for each component.**

At the end of phase: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

- Remedial classes can be planned for students missing regular classes on genuine grounds, thus ensuring that all certifiable competencies are achieved.
- Students who have less than 75% attendance in theory and 80% attendance in practical cannot appear for University examination, however; they may appear for Supplementary examination provided they attend the remedial classes organised between University Sit and Supplementary exam. Students who have attendance 60% or above shall be eligible for such remedial classes.

2.University Examinations: University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him to function effectively and appropriately as a physician of the first contact.

Nature of questions in theory examinations shall include different types such as structured essays like Long-Answer Questions (LAQ), Short-Answer Questions (SAQ) and Multiple-Choice Questions (MCQ) shall be accorded minimum 20% weightage of the total marks of each theory paper, Scenario based MCQs shall be accorded more weightage in view of NEXT. Blueprint may be used for theory question papers.

Practical/clinical examinations shall be conducted in the laboratories and /or hospital wards and a blueprint must be used. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and

develop a management plan.

Viva/oral examination should assess approach to patient management, emergencies and attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data like X-rays, identification of specimens, ECG, etc. is to be also assessed.

Application based questions should be included for newer CBME components like foundation course, ECE, AETCOM, Integrated topics, student-learner methods etc. in all theory, practical and clinical examinations of all internal assessments and university assessments.

University Examinations shall be held as under:

a) **Phase-I** shall be held at the end of Phase I training (in the 12th month of that training), in the subjects of Anatomy, Physiology and Biochemistry**.**

b) **Phase-II** examination shall be held at the end of Phase II training (12th month of that training), in the subjects of Pathology, Microbiology, and Pharmacology

c) **Phase III Part 1**examination shall be held at the end of Phase III part 1 of training (12th month of that training) in the subjects of Community Medicine, Forensic Medicine &Toxicology, Ophthalmology and Otorhinolaryngology.

d) **Phase III Part 2** / National Exit Test (NExT) as per NExT regulations- (Final Professional) examination shall be at the end of 17th / 18th month of that training, in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, and allied subjects as per NExT Regulations**.**

Criteria for passing in a subject: A candidate shall obtain a cumulative 50% marks in University conducted examination including theory and practical and not less than 40% separately in Theory and in Practical in order to be declared as passed in that subject. **In subjects that have two papers, the learner must secure a minimum** 40% marks in aggregate (both theory papers together).

Appointment of Examiners:

(1) Person appointed as an examiner in the particular subject must have at least three years of total teaching experience as Assistant Professor after obtaining postgraduate degree following MBBS, in the concerned subject in a college affiliated to a recognized medical college (by UGMEB of NMC).

(2) For Practical /Clinical examinations, there shall be at least four examiners for every learner, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner shall act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained.

(3) A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college. External examiners may be from outside the college/ university/ state/ union territory.

(4) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall mandatorily moderate the theory question paper(s).

(5) All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.

(6) All theory paper assessment should be done as a central assessment program (CAP) of the concerned university.

(7) Internal examiners shall be appointed from the same institution for unitary examination in the same institution. For pooled examinations at one centre, the approved internal examiners from the same university may be appointed.

(8) The Examiners for General Surgery and allied subjects shall be from General Surgery and 25% from orthopedics. There shall be one orthopedics examiner out of four examiners (either internal or external).

(9) Ophthalmology and ENT examinations to be held as separate examinations and not combined with other subjects.

(10) There shall be NO grace marks to be considered for passing in an examination.

ANNEXURES:

1. AETCOM module curricular governance and blueprinting
2. Academic calendar
3. Phase wise distribution of subjects
4. Foundation course hours distribution
5. Distribution of hours phase wise
6. Clinical postings distribution
7. Learner doctor (Clinical Clerkship) method
8. University examination marks
9. Sample format of paper theory with marks distribution
10. Alignment Phase I
11. Alignment Phase II
12. Family adoption programme
13. Guidelines for manpower requirement for research facilities

Annexure 1

AETCOM Modules teaching and assessment

The tables below show the suggested AETCOM blueprinting for various university papers and for module leader/in-charge for coordinating Module teaching. Each module leader/in-charge should select a multi-subject team and then the module is taught by various members of the team. The module teaching learning activities should be planned and conducted by this team.

Assessment: All internal and University exams must have one question/application based question on AETCOM in each theory paper (5%) and it should be assessed in various components of practical/clinical exams.

AETCOM Phase 1		
Subject	**Paper**	**Module number**
Anatomy	Paper 1	1.5
	Paper 2	1.4 Foundations of communications
Physiology	Paper 1	1.2
	Paper 2	1.3
Biochemistry	Paper 1	1.1 ● Enumerate and describe professional qualities and roles of a physician ● Describe and discuss commitment to lifelong learning as an important part of physician growth
	Paper 2	1.1 ● Describe and discuss the role of a physician in health care system ● Identify and discuss physician's role and responsibility to society and the community that she/ he serves

AETCOM Phase 2		
Subject	**Paper**	**Module number**
Microbiology	Paper 1	2.1
	Paper 2	2.8
Pharmacology	Paper 1	2.2, 2.3
	Paper 2	2.5
Pathology	Paper 1	2.4
	Paper 2	2.7

AETCOM Phase 3, part I		
Subject	**Paper**	**Module number**
Ophthalmology	Single paper	3.1
ENT	Single paper	3.3
Forensic Medicine & Toxicology	Single paper	2.6, 3.4
Community Medicine	Paper 1	3.2
	Paper 2	3.5

AETCOM Phase 3, part 2		
Subject	**Competency Number**	**Competency**
Medicine and Allied Subjects, integration	Paper 1	4.1
	Paper 2	4.3
Surgery and Allied Subjects,	Paper 1	4.4
	Paper 2	4.5, 4.6
Obstetrics and Gynecology	Paper 1	4.2, 4.7
	Paper 2	4.8
Pediatrics	Single paper	4.9

Annexure 2 Time distribution of MBBS Teaching & Examination Schedule

Academic calendar for admission batch 2024-2025												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year										1 14 Oct	2	3
Phase 1 exam	4	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15
Phase 2 exam	16	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27
Phase 3 part I exam	28	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39
	40	41	42	43	44	45	46	47	48	49	50	51
Phase 3 part II exam	52	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9
Internship	10	11	12 Proposed NExT step2									

Legends:

CRMI-Compulsory rotating medical internship

Proposed time distribution of MBBS Teaching & Examination Schedule from A.Y. 2025-'26

Generic proposed academic calendar from admission batch 2025-2026 onwards												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year									1	2	3	4
Phase 1 exam	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15	16
Phase 2 exam	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27	28
Phase 3 part I exam	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39	40
	41	42	43	44	45	46	47	48	49	50	51	52
Phase 3 part II exam	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9	10
Internship	11	12 Proposed NExT step2										

Legends:

CRMI-Compulsory rotating medical internship

Annexure 3

Distribution of subjects in each Professional Phase

Phase & year of MBBS training	Subjects & Teaching Elements	Duration (months)	University Examination
Phase-1	1. Foundation course of 2 weeks at start of course 2. Anatomy, Physiology & Biochemistry, Introduction to Community Medicine, including Family adoption programme (FAP) through village outreach 3. Early Clinical Exposure 4. Attitude, Ethics, and communication Module (AETCOM) including Humanities	12 months	Phase 1
Phase-2	1. Pathology, Microbiology, Pharmacology 2. Community Medicine (including FAP) 3. Forensic Medicine and Toxicology 4. Introduction to clinical subjects 5. Clinical postings, Family visits for FAP 6. AETCOM	12 months	Phase 2
Phase- 3, Part-I	1. Community Medicine, Forensic Medicine and Toxicology, Medicine & allied, Surgery & allied, Pediatrics, Obstetrics & Gynecology 2. Family visits for FAP 3. Oto-rhinolaryngology, 4. Ophthalmology 5. Clinical postings 6. AETCOM	12 months	Phase 3, Part 1
Electives	2 blocks, 15 days each (after the annual exams are over, irrespective of result outcome)	1 month	Phase 3, Part II
Phase-3, Part- II, MBBS	1. General Medicine, Dermatology, Psychiatry, Pediatrics, General Surgery, Orthopedics, Radiodiagnosis, Anesthesiology, Obstetrics & Gynecology 2. Clinical postings 3. AETCOM	18 months (including electives)	Phase 3, Part II

Annexure 4

Foundation Course- 2 weeks at start of course

Subjects/Contents	**Teaching hours**
Orientation Module including History of Indian Medicine	15
Skills Module	15
Community orientation module	5
Professional Development and Ethics Module (P&E) including Mental health	20
Enhancement of Language and Computer Skills Module including clinico-laboratory communication	10
Sports and Extra curricular Activities	15
Total	**80**

Annexure 5

Distribution of Subject Wise Teaching Hours for Phase -1 MBBS

Subject	Large group teaching	SGT/ Practical/ Tutorials/ Seminars	SDL	Total
Foundation Course				80
Anatomy	180	430	10	620
Physiology	130	305	10	445
Biochemistry *	82	157	10	249
Early Clinical Exposure (ECE)**	-	27	-	27
Community Medicine	20	20	-	40
Family adoption Program (FAP)	-	24	-	24
(AETCOM)***	-	26	-	26
Sports and extra-curricular Activities	-	-	-	10
Total	**412**	**989**	**30**	**1521**

SGT: Small group teaching, SDL: Self-directed learning

*Including Molecular Biology

**Minimum ECE hours. These hours are to be divided equally by anatomy, physiology & biochemistry.

***AETCOM module is a longitudinal programme.

Distribution of Subject Wise Teaching Hours for Phase-2 MBBS

Subjects	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	Clinical Postings*	SDL	Total
Pathology	80	170	-	10	260
Pharmacology	80	170	-	10	260
Microbiology	75	143	-	10	228
Community Med (including FAP)	25	0	24	10	59
Forensic Medicine and Toxicology	12	25	-	08	45
Clinical Subjects	60		540	-	600
AETCOM	-	29	-	8	37
Sports, Yoga extra-curricular activities	-	-	-	32	32
Final total	**332**	**537**	**564**	**88**	**1521**

SGT: Small group teaching SDL: Self-directed learning

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Friday.

There will be 15 hours per week for all clinical postings.

Distribution of Subject Wise Teaching Hours for MBBS Phase-3, part 1

Subject	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	SDL	Total
Electives	0	156	0	156
Gen. Medicine	20	30	10	60
Gen Surgery	20	30	10	60
Obstetrics & Gynecology	20	30	10	60
Pediatrics	20	30	05	55
*Forensic Medicine and Toxicology	35	65*	20*	120
Community Med	50	80	20	150
FAP (Visits +log book submission)	-	26	10	36
Otorhinolaryngology (ENT)	30	50	20	100
Ophthalmology	30	50	20	100
Clinical posting*				593
AETCOM	0	19	12	31
Total	**225**	**566**	**137**	**1521**

*****Out of this, 21 Hours (07 days x 03 hours) must be utilised for demonstration of post mortem examinations

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.

'

Distribution of Subject wise Teaching Hours for Phase 3 part-2 MBBS

Subjects	Lectures	SGL	SDL	Total
General Medicine	110	185	40	335
General Surgery	90	153	30	273
Obstetrics and Gynecology	80	150	30	260
Pediatrics	20	35	10	65
Orthopedics	30	50	20	100
AETCOM	30	0	22	52
Dermatology, Venereology & Leprosy	13	17	10	40
Psychiatry	13	17	10	40
Radiodiagnosis	8	10	8	26
Anesthesiology	8	10	8	26
Clinical postings*				1201
TOTAL	**402**	**627**	**188**	**2418**

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.
Extra hours may be used for preparation of NExT or SDL.

Annexure 6

Clinical Posting Schedules in weeks phase wise

Subjects	Period of training in weeks			Total Weeks
	Phase 2	Phase 3, Part 1	Phase 3, Part 2	
Electives	0	4	0	4
General Medicine	8	3	13	24
General Surgery	6	5	13	24
Obstetrics & Gynaecology	6	3	13	22
Pediatrics	4	2	6	12
Community Medicine	4	4	0	8
Orthopaedics	0	2	6	8
Otorhinolaryngology	4	4	0	8
Ophthalmology	4	4	0	8
Psychiatry	0	2	4	6
Radio-diagnosis	0	0	2	2
Dermatology, Venereology & Leprosy	0	0	6	6
Anaesthesiology	0	0	2	2
Total	**36**	**33**	**65**	**134**

Annexure 7: Learner- Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner-Doctor programme
Phase-1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness, family adoption program
Phase-2	History taking, physical examination, assessment of change in clinical status, communication and patient education, family adoption program
Phase-3, Part -1	All of the above and choice of investigations, basic procedures and continuity of care
Phase-3, Part -2	All of the above (except Family adoption programme) and decision making, management and outcomes

Annexure 8

Marks distribution for various subjects for University Annual Examinations

Phase of Course	Theory	Practicals	Passing criteria
Phase-I MBBS			
Anatomy- 2 papers	Paper **1-** 100	100	Mandatory to get 40% marks separately in theory and in practicals; and totally 50% for theory plus practicals.
	Paper 2 -100		
Physiology- 2 papers	Paper **1-** 100	100	
	Paper 2 -100		
Biochemistry- 2 papers	Paper **1-** 100	100	
	Paper 2- 100		
Phase-II MBBS			
Pathology - 2 papers	Paper 1- 100	100	
	Paper 2 -100		
Microbiology- 2 papers	Paper 1- 100	100	
	Paper 2- 100		
Pharmacology- 2 papers	Paper 1 -100	·100	
	Paper 2- 100		
Phase-III MBBS part 1			
Forensic Medicine and Toxicology- 1 paper	Paper 1 – 100	100	
Community Med – 2 papers	Paper 1 -100	100	
	Paper 2- 100		
Otorhinolaryngology	Paper-1 100	100	
Ophthalmology	Paper-1 100	100	
Phase-III MBBS part 2			
Medicine & allied	Paper 1- 100	100	
	Paper 2- 100		
Surgery & allied	Paper 1- 100	100	
	Paper 2- 100		
Obstetrics and Gynecology	Paper 1- 100	100	
	Paper 2- 100		
Pediatrics	Paper-1 100	100	

Medicine & allied Paper-2 to have Medicine 50%, Psychiatry 25% and Dermatology 25% questions.

Surgery & allied Paper-2 to have General Surgery 40%, Orthopedics 40%, Anesthesia 10% and Radiodiagnosis 10%.

Any further updates as per NEXT regulations.

Annexure 9

Suggested format for a Theory paper – Universities and colleges may design their unique question paper blueprint as per the principles given in the format		
	Duration-3 hours	**100 marks**
	Type of question/ Number of questions	**Marks per question**
Q No 1	Scenario based MCQ/ 10-20	1-2
Q No 2	Long essay question/ ONE	10-12
Q No 3	Reasoning Questions/ FIVE	3
Q No 4	Short notes (applied aspects)/ FOUR All four subparts related to six integrated topics if subject is part of integrated modules. However, if a subject has less competencies in integrated module than atleast 2 sub-parts from integrated modules.	4-5
Q No 5	Short notes / THREE	5-6
Q No 6	Short notes / FOUR (one subpart of 5 marks from AETCOM)	4-5

Annexure 10- Phase I Alignment

Suggested Phase-I Alignment Table (Anatomy, Physiology & Biochemistry) (Topics written here are indicative and can be adjusted if required)			
Month	**Anatomy**	**Physiology**	**Biochemistry**
1	-General Anatomy -Lower Limb (LL)	General Physiology, Blood	Cell membrane and organelles, extracellular matrix, Chemistry of carbohydrates, amino-acid & proteins, Lab Safety and Biomedical Waste Management and Chromatography (Demo)
2	-LL/UL -General Embryology & Histology	Blood, N-M	Plasma protein, immunoglobulins, Enzymes, Hemoglobin structure and Hemoglobinopathies, Electrophoresis (Demo), Heme synthesis, Porphyria's, Hemecatabolism, iron metabolism (mineral) Bilirubin formation, Jaundice, colorimetry (Demo)
3	UL -General Embryology & Histology	ANS, CVS	Clinical Enzymology, Chemistry of lipids, and lipoprotein metabolism, carbohydrate metabolism, vitamins, Estimation of Protein and albumin
4	-Abdomen -Related Systemic Embryology & Histology	GIT, Renal	Vitamins, Nutrition, Liver Function Tests, Renal Function Tests, acid-base balance and its disorders, water and electrolyte normal and abnormal analysis of urine(DOAP), Estimation of Urea, creatinine
5	-Abdomen,Pelvis -Related Systemic Embryology & Histology	GIT (contd.), Repro.	Metabolism of proteins and their metabolic disorders, Metabolism of carbohydrates and their metabolic disorders, Diabetes mellitus, Electron transport chain and oxidative phosphorylation, Xenobiotics, Estimation of Glucose.
6	-Thorax -Related systemic Embryology & Histology	Repro (contd.), RS	Metabolism of lipids (remaining) and disorders, Metabolism of proteins, minerals, vitamins, Reproductive Hormones, Prenatal screening, new born screening.
7	H & N–I -Related Systemic Embryology & Histology, Genetics	Endocrine (Neck region), CNS	Hormone Biochemistry; Tumour markers and, Thyroid Function Tests, Adrenal Function tests, Free radicals, and antioxidants
8	H & N–II -Related Systemic Embryology & Histology, Genetics	CNS contd , Special senses	Purine and pyrimidines metabolism, gout, purine salvage pathway, replication, DNA damage and repair mechanism, transcription, translation, post-translational modifications, protein synthesis inhibitors, genetic code, and mutations, estimation of uric acid
9	- Neuroanatomy -Related Systemic Embryology & Histology	CNS (Contd.) Integrated physiology	Molecular biology techniques and Miscellaneous.

Annexure 11- Phase 2 Alignment

	Pathology	**Microbiology**	**Pharmacology**
1st month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
2nd month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
3rd month	Inflammation Immunology HIV	Immunology and Immunological Disorders (8 competencies)	(ANS/PNS) NSAIDs
4th month	Immunology	Immunology and Immunological Disorders	Immunosuppressants CVS
	CVS	CVS & Bloodstream infections (1.5 months)	
1st Internal Assessment			
5th month	CVS Hematology	CVS & Bloodstream infections (1.5 months)	CVS Blood
6th month	Respiratory System (2-3 weeks)	Respiratory System (2.5 weeks) Tb	Chemo
7th month	Respiratory System	CNS 1.5 weeks	Respiratory System TB (7 hours) CNS 4weeks
	CNS 2 hours Kidney		
2nd Internal Assessment			
8th month	Kidney Genito-urinary 2 weeks	Genito-urinary and STI 2 wks GIT Hepatobiliary	Chemotherapy
9th month	GIT Hepatobiliary	GIT Hepatobiliary	GIT
10th month	Bone Breast Skin, eye, joints Endocrine	Musculoskeletal system, Skin and Soft Tissue Infections (2 weeks) Zoonotic & Miscellaneous Infections (2 weeks) HAI and Antimicrobial Stewardship Hospital Infection Control	Drugs on skin, ocular Endocrine
3rd Internal Assessment/ Pre University			
11th month	**Phase 2 University Exam**		

Annexure 12-FAMILY ADOPTION PROGRAMME

CURRICULUM FOR FAMILY ADOPTION PROGRAMME (FAP)

The National Medical Commission (NMC) envisages the FAP as an opportunity for the Institute(s) to discharge its social responsibility and as a critical platform to facilitate *Authentic learning* of the under-graduate students to sensitize them with the real-life challenges of working for the Universal health coverage (UHC). The FAP will present an opportunity for the students to experience the health inequities and understand the social factors contributing to it.

The FAP is expected to complement the other Competency-Based Medical Education (CBME) reforms e.g., posting of interns in the public health facilities under the Compulsory Rotating Medical Internship (CRMI) and the District Residency Program (DRP) for producing socially-responsive competent Indian Medical Graduates who would contribute for the cause of reducing inequities in health and society in the future. Institute(s) should leverage collaboration and partnership with the community and the public health care delivery system for effective implementation of the FAP so as to serve the larger purpose of the CBME reforms in the country.

TARGETS TO BE ACHIEVED BY STUDENTS:

Phase 1:

1. Rapport building and connect with the families
2. Learning communication skills and inspire trust building amongst families
3. Understand the dynamics of community set-up of that region
4. Mobilize families for participation in Screening programs
5. Undertake detailed family study and prepare the family diagnosis to identify diseases/ ill-health/ malnutrition of allotted families/ risk factors / scope for health promotion
6. Formulate objectives to be achieved for each family

Phase 2:

1. Continue active involvement to become the first doctor /reference point of the family by continued active interaction
2. Ensure follow-up of members from adopted families for vaccination, growth monitoring and promotion, menstrual hygiene, IFA prophylaxis, health lifestyle adoption, nutrition, vector control measures, compliance to medications etc.
3. Work collaboratively with adopted families to achieve the formulated objectives
4. Inform families about ongoing government sponsored health related programs
5. Ensure appropriate referral of family members considering their choice for additional or annual screening at higher health facilities.

Phase 3:

1. Work collaboratively with adopted families to achieve the formulated objectives
2. Observation of services delivered at the community level during Village Health Nutrition Days (VHND), Community-based events (CBEs), Health and Wellness Centres (HWC) camps under the different national health program
3. Build understanding regarding work of frontline workers (ANM, ASHA/USHA, AWW, MPW) through interaction
4. Build understanding around intersectoral action for health through Local self-governing bodies, NGOs, SHGs etc for health promotion
5. Undertake short term action projects for improving health in the adopted families or community
6. Analysis of their own involvement and impact on improving the health conditions in the adopted families

Final visit to have last round of active interaction with families - prepare a report to be submitted to department addressing:

1. Improvement in overall health of the family
2. Immunization

3. Sanitation,
4. De-addiction
5. Whether healthy lifestyles like reading good books. Sports/yoga activities have been inculcated in the house-holds
6. Improvement in anaemia, tuberculosis control
7. Health awareness
8. Any other issues
9. Role of the student in supporting family during illness / medical emergency
10. Social responsibility in the form of environment protection programme in form of plantation drive (medicinal plants/trees) cleanliness and sanitation drive with the initiative of the medical student

Phase wise competencies to be achieved through the FAP

Professional year and topics for visit	**Competency**	**Objectives**	**Suggested T-L methods**	**Suggested Assessment methods**	**Teaching Hours**
First year Visit 1 – Rapport building with the Families and Orientation Socio-demographic and Socio-economic profile Visit 2 – Environmental health	Collect demographic profile of allotted families, take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the basic demographic profile of allocated family members and formulate objectives for each family	Family survey, Screening camps Field visit clinics	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR [If 3 hours visit then 8 visits to be conducted]
	Mobilize the adopted family members for participation in screening camps and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the basic health profile and treatment history of allocated family members	Screening camps Field visit clinics PLA techniques (sorting, ranking etc)	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	

Drinking Water supply, Sanitation and Vector control Visit 3 – Individual health profile including Anthropometry Visit4 – Addictions Tobacco, Alcohol, Screen addiction and other addictions	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow up of treatment and suggested remedial measures.	Family survey, Screening camps Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook based verification of competency, Multi-source feedback Reflections	
	Take part in health promotion, environment protection and sustenance activities	By the end of this visit, students should be able to report the activities undertaken for health promotion, environment protection and sustenance like tree plantation, herbal plantation activities conducted in the community	Participation in and process documentation of activities (NSS activities) along with reporting of case studies	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	
Second year Visit 5 – Healthy Lifestyle Dietary assessment,	Take history and conduct clinical examination of all family members	By the end of this visit, Students should be able to compile the updated medical history of family members through family follow-up	Family survey, Field visit clinics Referral and follow-uo	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR

Physical activity and Exercise Visit 6 – Micronutrient deficiencies - Nutritional anemia, Iodine deficiency disorders Care of under-5 children Visit 7 – Feeding, vaccination, HBYC Maternal health Visit 8 – Care of Pregnant and Lactating mothers	Facilitate checkup and/or referral of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the details of clinical examination and investigations like HB %, blood group urine routine and blood sugar or any other investigation along with treatment history, compliance to treatment, of allocated family members	Field visit clinics Referral Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook Case studies Multi-source feedback	[If 3 hours visit then 8 visits to be conducted]
	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members including information about National programs provided. Students should also be able to follow up on treatment and suggested remedial measures under the guidance of a mentor. Documentation of referral in logbook	Family survey, Screening camps Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook based verification of competency, Multi-source feedback Reflections	
Third year Visit 9 – Communicable diseases – Tuberculosis, Influenza and others Visit 10 –	Take history and conduct clinical examination of all family members and facilitate health check-up if required	By the end of this visit, students should be able to maintain follow-up with the families and update the medical history of family members	Family survey, Field visit clinics Referral and follow-up	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 36 hours [A minimum of 6 visits of full day of around 6 hours] OR [If 3 hours visit then

Non-communicable diseases – HTN, DM and others Visit 11 – Adolescent health / School health Menstrual hygiene, Life skills Visit 12 – Healthy ageing Health care of the Elderly Visit 13 – Mental health Healthy coping strategies and Resilience Visit 14 – Well-being of the Families Final visit and Report submission	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members and collaborative efforts undertaken with family members for improving their health.	Family survey, Field visit clinics Referral and tracking Reporting of follow up visits.	Community case presentation. OSPE, Observation, FAP logbook based verification of competency, Multi-source feedback Reflections	12 visits to be conducted]
	Counsel the family members of allotted families and analyze the health trajectory of adopted family under overall guidance of mentor	By the end of this visit, students should able to analyze and report the findings of short term action projects and its effect on health trajectory at individual Family and community level	Participation in and process documentation of activities (NSS activities) along with reporting of photographic evidences. Small group discussion (report of the health trajectory of adopted family)	Community case presentation. OSPE, Logbook based verification of competency. Observation Viva-voce Multi-source feedback Reflections	
	Work as a member of Health Team and facilitate intersectoral action for health	By the end of this visit, students should able to report the role of various frontline functionaries' delivery primary health care and Local self-governing bodies, NGOs, SHGs etc for health promotion	Observation and reporting of events Exposure visits Interaction with frontline functionaries	Logbook based verification of competency, Observation Viva-voce Multi-source feedback Reflections	

LOG BOOK FOR FAMILY ADOPTION PROGRAMME

(To be modified by the Institute as per their requirement)

Institute:

University:

Name of the Student:

Roll No: **Batch:**

Address of Community for FAP:

Number of Adopted Families:

Names of Head of Household of Adopted families:

Dates of Screening Camp: _____

Name of Faculty Guide/Mentor

Names of PGs/SRs Guide/Mentor

Names of Para-medical staff Guide/Mentor

Annexure 13

DRAFT GUIDELINES FOR MANPOWER REQUIREMENT FOR RESEARCH FACILITIES IN A MEDICAL COLLEGE

Research labs may be under following categories:

1. Molecular lab
2. Stem cell research lab
3. Cytogenetics lab
4. HLA and tissue typing research lab
5. Integrative Research lab

Applied Clinical research for organ perfusion, cancer research, in vitro fertilization, etc. can be under any of the above research facilities.

For integrative research lab, qualified faculty from Yoga/ Ayurvedic/ Siddha etc can also be employed and man-power may be selected as per AYUSH guidelines.

MAN POWER

(1) Lab Director-post-1

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry/

Faculty with PhD/ MSc PhD may be taken if exceptional in research.

Lab work: 10 years experience

Lab research related publications- minimum 10 in last 10 years

(2) Lab Supervisor- post-1 (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry

Faculty with PhD (Medical subject) will be preferred

or MSc in life sciences with PhD from Medical college

Lab work: 7 years experience

Lab research related publications- minimum 5 in last 5 years

(3) Senior Scientific Research Officer- posts- 1 or more (per research facility)

Minimum Qualifications required**:**

PhD with MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry / PhD in medical college or MSc in life sciences with PhD from medical college

Lab work: 4years experience

Lab research related publications- minimum 3 in last 3 years

(4) **Junior Research Officer**-posts- 1 or more (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry or Diploma in Clinical Pathology/ MSc in life sciences, PhD scholar/ Postdoc fellow

Diploma holder in any branch may pursue PhD if experience / research inclinations proved for minimum of 1 year. They can be enrolled for integrated Master's PhD course.

Lab work: 1 year experience

Lab research related publications- preferably 1 in last 2 years

(5) Laboratory Technicians- Posts- minimum 2

Minimum Qualifications required**:** BSc/ MSc, in life sciences including Biotechnology, DMLT

(6) Data entry operator/ Clerk -1 (minimum)

Minimum Qualifications required**:**

Graduation

(7) **Store keeper** -1 (minimum)

Minimum Qualifications required**: Graduate**

Experience: 5 years

(8) **Biostatistician- 1**(minimum)-Asst Professor/ Above

Experience: 5 years

(9) Lab attendant

(10) Peon/ Multi-task worker

(11) **Clinical Monitors-**

Any MBBS or above with research inclination

(12) Social worker/ MSW with applied research inclinations

DISABILITY GUIDELINES

Modified guidelines for the academic year 2025-'26 onwards regarding admission of students with 'specified disabilities' under the 'Rights Of Persons With Disabilities Act 2016' with respect to admission in MBBS will be notified separately. Till further notice, the disability guidelines (page numbers 96 to 98) stipulated under CBME Guidelines 2023 dated 1st August, 2023 shall be applicable for the academic year 2024-'25.

NATIONAL MEDICAL COMMISSION

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



Volume I-2024

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

2024

National Medical Commission
Pocket-14, Sector- 8, Dwarka
New Delhi 110 077

FOREWORD

The National Medical Commission (NMC) was created on 24th September, 2020 by the Act of Parliament replacing the erstwhile Medical Council of India and Board of Governors. The foundation for making of an Indian Medical Graduate ('Doctor') depends on building a sound base of medical education. In the year 2019, a committed team appointed by erstwhile MCI revolutionized the age-old didactic teaching system in Indian medical colleges by bringing in Competency Based Medical Education (CBME). This unique approach has raised the level of medical education with respect to quality, versatility and horizontal- vertical alignment of all subjects. The mandate of NMC to see that the first line of health care leaders who reach out to the common masses empathizing with the problems of the rural populace are being met with. The two-pronged approach of increasing the quantity and improving the quality of medical education is being tackled with this approach.

Education has now become student-centric and patient-centric instead of pedagogic system. The first batch of students have now completed their training under CBME implemented in 2019. It was a demand from actively involved academia to revisit the curriculum and modify it so as to keep abreast at international level. Interim years of covid pandemic also were 'a good teaching academy' for all. Increasing influence of artificial intelligence on student community, matched with rising cost of medical education and competitiveness, instead of accommodative, helping and balanced approach,

has led to increasing risk of losing social intelligence and humane approach amidst the emerging doctors. The risk of creating overqualified clerks looms large on our medical system.

A national team of experienced as well as emerging empathetic and talented teachers engaged as full-time faculty in various medical institutions were invited by the Undergraduate Education Board (UGMEB) of the NMC to invest their extra energy and hours to assess the curricula, examinations, AETCOM, vertical and horizontal integration of various subjects and bring in modifications. Each subject had committee of five persons on an average, from different parts of the country. Totally 93 experts have given their valuable time and energy in framing this new curriculum and all three volumes, prepared by their predecessors in 2019. The hard work done by them was the base on which this edifice has further been refined.

We are sure that fraternity and students are going to have an educational journey that will be full of fun, knowledge and experience sharing. UGMEB of the NMC acknowledges each and every one involved in the process, named and unsung heroes who have been the part of this exercise of bringing the document to the readers.

Dr. Aruna V. Vanikar, President,
Dr. Vijayendra Kumar, Member,
UGMEB.

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How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. The manual must be used with reference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the Roles (global competencies) extracted from the Competency Based Medical Education (CBME) Guidelines, 2024. The global competencies identified as defining the roles of the Indian Medical Graduate are the broad competencies that the learner must aspire to achieve, teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

Extract from the Competency Based Medical Education (CBME) Guidelines, 2024

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing r equisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby advocated. The first contact physician needs to be skilful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

2.1 National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

a. Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.

b. Learn key aspects of National policies on health and devote himself to its practical implementation.

c. Achieve competence in the practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

d. Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

e. Become an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2 Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

a. Be competent for working in the health care team from Phase I MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

b. Be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.

c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential medicines" and their common adverse effects.

d. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

e. Possess the attitude for continued self-learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

f. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

i. Family Welfare and Maternal and Child Health (MCH);

ii. Sanitation and water supply;

iii. Prevention and control of communicable and non-communicable diseases;

iv. Immunization;

v. Health Education and advocacy;

vi. Indian Public Health Standards (IPHS) at various level of service delivery;

vii. Bio-medical waste disposal;

viii. Organizational and or institutional arrangements.

g. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counselling.

h. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures with maximum community participation.

i. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

j. Be competent to work in a variety of health care settings.

k. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility, dependability, and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduates to acquire certifiable skills as given in comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Indian Medical Graduate, as given in the Graduate Medical Education Regulations.

2.3 Goals for the Learner

In order to fulfil these goals, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

a. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

b. Leader and member of the health care team and system with capabilities to collect, analyse, synthesize and communicate health data appropriately.

c. Communicate with patients, families, colleagues, community and community in a methodological and skillful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

d. Lifelong learner committed to continuous improvement of skills and knowledge.

e. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, profession, and society. Training of humanities and social sciences will be useful for this training.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education. Curriculum that focuses on the desired and observable activity in real life situations. In order to effectively fulfil the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1 Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.2 Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.

3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5 Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6 Demonstrate ability to elicit and record from the patient, and other relevant sources. including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.

3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

a. Disease prevention,

b. Health promotion and cure,

c. Pain and distress alleviation, and

d. Rehabilitation and palliation.

3.1.13 Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,

3.1.14 Demonstrate ability to appropriately identify and refer patients who may require· specialized or advanced tertiary care.

3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3.2 Leader and member of the health care team and system

3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4 Access and utilize components of the health care system and health delivery in a_ manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyse and utilize health data.

3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3 Communicator with patients, families, colleagues and community

3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a language that patients, families, colleagues and community understands and in a manner that will improve patient patients, families, colleagues and community satisfaction and health care outcomes.

3.3.2 Demonstrate ability to establish professional relationships with patients, families, colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

3.3.3 Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient's preferences, values, prior

experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision- making and overcoming hesitancy towards health initiatives.

3.4 Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1 Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2 Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3 Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4 Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.

3.4.5 Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5 Professional who is committed to excellence, is ethical, responsive and accountable to patients, the profession and community.

3.5.1 Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2 Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3 Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4 Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5 Demonstrate commitment to the growth of the medical profession as a whole.

Section 2

Subject-wise competencies

Section 2 contains subject-wise competencies that must be achieved at the end of instruction in that subject. These are organised in tables.

Competencies (Outcomes) in each subject are grouped according to topics number-wise. It is important to review the individual competencies in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, and Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, 'perform' indicates independent performance without supervision and is required rarely in the pre-internship period. The competency is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section "definitions used in this document". The suggested number of times a skill must be performed independently for certification in the learner's log book is also given.

The number of topics and competencies in each subject are given below:

Topics and competencies in Phase 1 & Phase 2 subjects (Volume I)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Anatomy	82	413
2.	Physiology	12	136
3.	Biochemistry	14	84
4.	Pharmacology	10	92
5.	Pathology	35	182
6.	Microbiology	11	74
7.	Forensic Medicine	14	158
	Total	**178**	**1139**

Topics competencies in Medicine and Allied subjects (Volume II)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Community Medicine	20	136
2.	General Medicine	29	525
3.	Paediatrics	35	406
4.	Psychiatry	13	17
5.	Dermatology, Venereology & Leprosy	15	48
	Total	**112**	**1132**

Topics and competencies in Surgery and Allied subjects (Volume III)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	General Surgery	30	133
2.	Ophthalmology	10	60
3.	Otorhinolaryngology	04	63
4.	Obstetrics & Gynaecology	38	141
5.	Orthopaedics’	14	40
6.	Anaesthesiology	11	52
7.	Radiodiagnosis	07	21
	Total	**114**	**510**

Understanding the competencies table

Understanding the competencies table

A	B	C	D	E	F	G	H
No.	**Competencies**	**Domain**	**K/KH/SH/P**	**Core**	**Suggested Teaching Learning Method**	**Suggested Assessment method**	**No. required to certify (P)**
Physiology							
PY1.1	Describe the structure and functions of a	K	KH	Y	LGT, SGT	Written/Viva	
IM 4.10	Elicit *document* and present a medical history that helps delineate the	S	SH	Y	Bed Side clinic, DOAP	OSCE, Direct observation	3

. Unique number of the competency

First two alphabets represent the subject code (see list); number following alphabet reflects competency number, following period is a running number.

Description of competency

Identifies the domain or domains addressed
K - Knowledge
S - Skill
A - Attitude
C - Communication

Identifies the level of competency required based on the Miller's pyramid
K - Knows
KH - Knows How
SH - Show How
P - Perform independently

Identifies if the competency is core or desirable
Y indicates Core;
N-non-core

Identifies the suggested learning method.
DOAP - **D**emonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method
Skill assessment in Clinics, Skills lab, Practicals etc. by direct observation

Number of times a Skill needs to be done

LGT-Large group teaching; SGT-Small group teaching; OSCE-Objective structured clinical examination; P- indicate how many competencies/competencies must be done independently under

observation for Certification. ***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning objectives from competencies

Deriving learning objectives from competencies

K	Knows	A knowledge attribute – Usually enumerates or describes
KH	Knows how	A higher level of knowledge – is able to discuss or analyse
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify the etiology of meningitis based on given CSF parameters**	**K/S**	**SH**	**Y**

LO 1	At the end of the session the **phase II student** must be able to enumerate the most common causes of meningitis correctly
LO 2	At the end of the session the **phase II student** must be able to enumerate the components of CSF analysis correctly
LO 3	At the end of the session the **phase II student** must be able to **describe** the CSF features for a given etiology of meningitis **accurately**
LO 4	At the end of the session the **phase II student** must be able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

Learning Objective (LO): Statement of what a learner should be able to do at the end of a specific learning experience

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning methods from competencies

Deriving learning methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the **Phase II student** must be able to enumerate the most common causes of meningitis **correctly**	Large or small group teaching
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly	
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given etiologic of meningitis **accurately**	
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**	Small group teaching, practical session

*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

Deriving assessment methods from competencies

Deriving assessment methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the Phase II student must be able to enumerate the most common causes of meningitis correctly	Written/SAQ: Enumerate 5 causes of meningitis based on their prevalence in India
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given aetiology of meningitis **accurately**	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**	Short note / part of the structured essay/ Direct observation/OSPE/ Viva voce Review the CSF findings in the following patient and identify (write or vocalize) the most likely etiology

*** Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document**

Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve. In other words: Where do you want to go? or What do you want to become?
2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served. In other words: What should you have? or What should have changed?
3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience. In other words: What the Indian Medical Graduate should know, do, or behave.

Action Verbs used in this manual

Knowledge	Skill	Attitude/communicate
Enumerate	Identify	Counsel
List	Demonstrate	Inform
Describe	Perform under supervision	Demonstrate understanding of
Discuss	Perform independently	Communicate
Differentiate	Document	
Define	Present	
Classify	Record	
Choose	Elicit	
Interpret		
Report		

Note: Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.

1. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
2. Most tasks that require performance during undergraduate years will be performed under supervision.
3. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

Explanation of terms used in this manual

LGT (LGT)	Any instructional large group method including interactive lecture
SGT (SGT)	Any instructional method involving small groups of students in an appropriate learning context
DOAP (Demonstration-Observation - Assistance-Performance)	A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently
Skill assessment/ Direct observation	A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands
DOPS (Directly observed procedural skills)	DOPS is a method of assessment for assessing competency of the students in which the examiner directly observes the student performing procedure
Core	A competency that is necessary in order to complete the requirements of the subject (traditional must know)
Non-Core	A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)
National Guidelines	Health programs as relevant to the competency that are part of the National Health Program

Domains of learning

K	Knowledge
S	Skill
A	Attitude
C	Communication

Levels of competency

K	Knows	A knowledge attribute - Usually enumerates or describes
KH	Knows how	A higher level of knowledge - is able to discuss or analyze
SH	Shows how	A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Note:

1. In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

2. It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified

Volume I
Competency based Undergraduate Curriculum
in
Phase 1 & Phase 2 subjects

ANATOMY (CODE: AN)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
Anatomy (Topics = 82, Competencies = 413)							
	Topic 1: Anatomical terminology -	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN1.1	Describe & Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movements in the human body	K/S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skills assessment	
AN1.2	Describe composition of bone and bone marrow	K	KH	Y	LGT	Written/ viva	
	Topic 2: General features of bones & Joints	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN2.1	Describe parts, types, peculiarities of each type, blood and nerve supply of bones.	K	KH	Y	LGT	Written/ viva voce	
AN2.2	Describe the laws of ossification, epiphysis, its various types and their importance	K	KH	N	LGT	Written/ Viva voce	
AN2.3	Describe special features of a sesamoid bone	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN2.4	Describe various types of cartilage with its structure & distribution in body	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN2.5	Describe & demonstrate various joints with possible movements, subtypes and examples	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/skills assessment	
AN2.6	Explain the concept of nerve supply of joints & Hilton's law	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
	Topic 3: General features of Muscle	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN3.1	Classify & describe muscle tissue according to structure, size, shape, region & action	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN3.2	Describe parts of skeletal muscle and differentiate between tendons and aponeuroses with examples	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN3.3	Explain Shunt and spurt muscles with examples and role in joint movement	K	KH	N	LGT, Demonstration	Written/ Viva voce	
	Topic 4: General features of skin and fascia	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN4.1	Describe different types of skin & dermatomes in body	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN4.2	Describe & demonstrate structure of skin with its appendages along with clinical anatomy	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.3	Describe structure, contents and identify modifications of superficial fascia along with fat distribution in body	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.4	Describe & demonstrate modifications of deep fascia with its location, function & examples	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.5	Explain principles of skin incisions and their surgical importance	K	KH	N	LGT, Demonstration	Written	
	Topic 5: General features of the cardiovascular system	**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
AN5.1	Differentiate between blood vascular and lymphatic system	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.2	Differentiate between pulmonary and systemic circulation	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.3	Describegeneral differences between arteries, veins and sinuses	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.4	Explain functional and gross structural differences between elastic, muscular arteries and arterioles	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.5	Describe portal system giving examples	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.6	Describe the concept of anastomoses and collateral circulation, its different sites & significance of end arteries	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN5.8	Describe thrombosis, infarction & aneurysm	K	KH	N	LGT, Demonstration	Written/ Viva voce	
	Topic 6: General Features of lymphatic system	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN6.1	Describe the components and functions of the lymphatic system	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN6.2	Describe structure of lymph capillaries & mechanism of lymph circulation	K	KH	N	LGT, Demonstration	Written	
AN6.3	Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	K	KH	N	LGT, Demonstration	Written/ Viva voce	
	Topic 7: Introduction to the nervous system	**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
AN7.1	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.2	List components of nervous tissue and their functions	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.3	Describe parts of a neuron and classify them based on number of neurites, size & function	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.4	Describe structure of a typical spinal nerve	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.5	Describe principles of sensory and motor innervation of muscles	K	KH	N	LGT, Demonstration	Written	
AN7.6	Describe concept of loss of innervation of a muscle with its applied anatomy	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.7	Describe various types of synapse	K	KH	N	LGT, Demonstration	Written	
AN7.8	Describe differences between sympathetic and spinal ganglia	K	KH	N	LGT, Demonstration	Written	
	Topic 8: Features of individual bones (Upper Limb)	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN8.1	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (clavicle, scapula, humerus, radius , ulna, carpal bones)	K,S	SH	Y	Demonstration	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN8.2	Demonstrate important muscle attachments on the given bone	K,S	SH	Y	Demonstration	Written/ Viva voce/ skill assessment	
AN8.3	Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform	K,S	SH	Y	Demonstration	Viva voce Practicals	
AN8.4	Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	K	KH	N	LGT, Demonstration	Viva voce	
	Topic 9: Pectoral region	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN9.1	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor and describe clavipectoral fascia	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN9.2	Describe the location, extent, deep relations, structure, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	K	KH	Y	LGT,	Written/ Viva voce	
AN9.3	Describe development of breast, associated age changes and congenital anomalies	K	KH	N	LGT, Demonstration	Written/ Viva voce	
	Topic 10: Axilla, Shoulder and Scapular region	**Number of Competencies (13)**			**Number of competencies for certification: (NIL)**		
AN10.1	Identify & describe boundaries and contents of axilla	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.2	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of axillary vein	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.3	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN10.4	Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.5	Explain variations in formation of brachial plexus	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN10.6	Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN10.7	Describe axillary lymph nodes, areas of drainage and anatomical basis of their enlargement	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written	
AN10.8	Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.9	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation	K	KH	N	LGT, Practical, Demonstration, Dissection	Written	
AN10.10	Describe and identify the deltoid and rotator cuff muscles along with their nerve supply and clinical anatomy	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.11	Describe & demonstrate attachment, action and clinical anatomy of serratus anterior muscle	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.12	Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections	K	KH	Y	LGT	Viva voce	
	Topic 11: Arm & Cubital fossa	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN11.1	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.3	Describe the anatomical basis of Venipuncture of cubital veins	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN11.4	Describe the anatomical basis of Saturday night paralysis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN11.5	Identify & describe boundaries and contents of cubital fossa	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.6	Describe the anastomosis around the elbow joint	K	KH	N	LGT	Written	
	Topic 12: Forearm & hand	**Number of Competencies (15)**			**Number of competencies for certification: (NIL)**		
AN12.1	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN12.3	Identify & describe flexor retinaculum with its attachments	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.4	Explain anatomical basis of carpal tunnel syndrome	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN12.5	Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.6	Describe & demonstrate movements of thumb and muscles involved	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN12.7	Identify & describe course and branches of important blood vessels and nerves in hand	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.8	Describe anatomical basis of Claw hand	K	KH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN12.9	Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN12.10	Explain infection of fascial spaces of palm	K	KH	N	LGT	Written	
AN12.11	Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.12	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN12.13	Describe the anatomical basis of Wrist drop	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN12.14	Identify & describe compartments deep to extensor retinaculum and describe the boundaries and contents of anatomical snuff box.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.15	Identify & describe extensor expansion formation	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
Topic 13: General Features, Joints, radiographs & surface marking		**Number of competencies: (8)**			**Number of competencies for certification: (NIL)**		
AN13.1	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage	K	KH	Y	LGT, demonstration	Written/ Viva voce	
AN13.2	Describe dermatomes of upper limb	K	KH	N	LGT	Written/ Viva voce	
AN13.3	Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN13.4	Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangealjoint	K	KH	N	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN13.5	Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand	K,S	SH	Y	LGT, Practical, Demonstration	Viva voce/ skill assessment	
AN13.6	Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end and Inferior angle of the scapula	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN13.7	Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	
AN13.8	Describe development of upper limb	K	KH	N	LGT	Written	
	Topic 14: Features of individual bones (Lower Limb)	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN14.1	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (hip bone, femur, tibia fibula, tarsal bones)	K,S	SH	Y	Demonstration	Viva voce	
AN14.2	Identify & describe joints formed by the given bone	K,S	SH	Y	LGT, Demonstration	Viva voce	
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia, and explain violation of law of ossification in fibula	K	KH	Y	LGT, Demonstration	Viva voce	
AN14.4	Identify and name various bones in the articulated foot with individual muscle attachment	K,S	SH	N	LGT, Demonstration	Viva voce	
	Topic 15: Front & Medial side of thigh	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN15.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.2	Describe and demonstrate major muscles with their attachment, nerve supply and actions	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.4	Explain anatomical basis of Psoas abscess & Femoral hernia	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN15.5	Describe and demonstrate adductor canal with its contents	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	
	Topic 16: Gluteal region & back of thigh	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN16.1	Describe and demonstrate major muscles with their attachment, nerve supply and actions.	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.2	Describeanddemonstrate structures under thecover of gluteus maximus. Also explain the anatomical basis of sciatic nerve injury during gluteal intramuscular injections	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.3	Explain the anatomical basis of Trendelenburg sign	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN16.4	Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.5	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.6	Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa with its clinical anatomy	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
	Topic 17: Hip Joint	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN17.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN17.2	Describe anatomical basis of complications of fracture neck of femur	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN17.3	Describe dislocation of hip joint and surgical hip replacement	K	KH	N	LGT, Demonstration	Written/ Viva voce	
Topic 18: Knee joint, Anterior compartment of leg & dorsum of foot		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN18.1	Describe and demonstrate major muscles of anterior compartment of leg with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.2	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.3	Explain the anatomical basis of foot drop	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN18.4	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, nerve supply, bursae around the knee joint along with anastomosis around the knee joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.5	Explain the anatomical basis of locking and unlocking of the knee joint	K	KH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN18.6	Describe knee joint injuries with its applied anatomy	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN18.7	Explain anatomical basis of Osteoarthritis	K	KH	N	LGT	Written/ Viva voce	
Topic 19: Back of Leg & Sole		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN19.1	Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN19.2	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN19.3	Explain the concept of "Peripheral heart"	K	KH	Y	LGT	Written/ Viva voce	
AN19.4	Explain the anatomical basis of rupture of calcaneal tendon	K	KH	N	LGT	Written/ Viva voce	
AN19.5	Describe factors maintaining importance arches of the foot with its importance	K	KH	Y	LGT	Written/ Viva voce	
AN19.6	Explain the anatomical basis of Flat foot & Club foot	K	KH	N	LGT	Written/ Viva voce	
AN19.7	Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	K	KH	N	LGT	Written/ Viva voce	
	Topic 20: General Features, Joints, radiographs & surface marking	Number of Competencies (10)			Number of competencies for certification: (NIL)		
AN20.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration, Practical	Written/ Viva voce/ skill assessment	
AN20.2	Describe the subtalar and transverse tarsal joints	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN20.3	Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN20.4	Explain anatomical basis of enlarged inguinal lymph nodes	K	KH	N	LGT	Written/ Viva voce	
AN20.5	Explain anatomical basis of varicose veins and deep vein thrombosis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN20.6	Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb	K/S	SH	Y	LGT, SGT, Demonstration	Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN20.7	Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
AN20.8	Identify & demonstrate palpation of femoral, popliteal, posterior tibial, anterior tibial & dorsalis pedis arteries in a simulated environment	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
AN20.9	Demonstrate surface projection of: femoral, popliteal, dorsalis pedis, post tibial arteries, Mid inguinal point, femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
AN20.10	Describe basic concept of development of lower limb	K	KH	N	LGT	Viva voce	
	Topic 21: Thoracic cage	**Number of Competencies (11)**			**Number of competencies for certification: (NIL)**		
AN21.1	Identify and describe the salient features of sternum, typical rib and typical thoracic vertebra.	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Viva voce/ skill assessment	
AN21.2	Identify & describe the features of atypical ribs and atypical thoracic vertebrae.	K,S	SH	N	LGT, Dissection, Practical, Demonstration	Viva voce/ skill assessment	
AN21.3	Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet along with its applied aspect.(Thoracic inlet Syndrome)	K/S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN21.4	Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN21.5	Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN21.6	Mention origin, course and branches/ tributaries of: 1) anterior & posterior intercostal vessels 2) internal thoracic vessels	K	KH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce	
AN21.7	Mention the origin, course, relations and branches of 1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery	K	KH	N	LGT, Dissection, Practical, Demonstration	Written	
AN21.8	Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	K,S	SH	N	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN21.9	Describe & demonstrate mechanics and types of respiration	K,S	SH	Y	Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN21.10	Describe costochondral and interchondral joints	K	KH	N	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
AN21.11	Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum	K	KH	Y	LGT, Demonstration, Dissection	Written/ Viva voce	
	Topic 22: Heart & Pericardium	**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN22.1	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN22.2	Describe & demonstrate external and internal features of each chamber of heart	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN22.3	Describe & demonstrate origin, course and branches of coronary arteries	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN22.4	Describe anatomical basis of ischaemic heart disease	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN22.5	Describe & demonstrate the formation, course, tributaries and termination of coronary sinus	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	
AN22.6	Describe the fibrous skeleton of heart	K	KH	Y	LGT	Written	
AN22.7	Mention the parts, position and arterial supply of the conducting system of heart	K	KH	Y	LGT	Written/ Viva voce	
Topic 23: Mediastinum		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN23.1	Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	
AN23.2	Describe & demonstrate the extent, relations and tributaries of thoracic duct and enumerate its applied anatomy.	K,S	SH	Y	LGT	Written/ Viva voce/ skill assessment	
AN23.3	Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos andaccessory hemiazygos veins	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN23.4	Mention the extent, branches and relations of arch of aorta & descending thoracic aorta	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN23.5	Identify & Mention the location and extent of thoracic sympathetic chain	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN23.6	Describe the splanchnic nerves	K	KH	N	LGT	Written	
	Topic 24: Lungs & Trachea	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
AN24.2	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN24.3	Describe a bronchopulmonary segment with its clinical anatomy	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN24.4	Identify phrenic nerve & describe its formation & distribution	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN24.5	Mention the blood supply, lymphatic drainage and nerve supply of lungs	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
AN24.6	Describethe extent, length, relations, bloodsupply, lymphatic drainageand nerve supply of trachea	K	KH	N	LGT, Demonstration	Written	
	Topic 25: Thorax	**Number of Competencies (9)**			**Number of competencies for certification: (NIL)**		
AN25.1	Identify, draw and label a slide of trachea and lung	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	
AN25.2	Describe development of pleura, lung & heart	K	KH	Y	LGT	Written	
AN25.3	Describe fetal circulation and changes occurring at birth	K	KH	Y	LGT, Demonstration	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheoesophageal fistula	K	KH	Y	LGT	Written/ Viva voce	
AN25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	K	KH	Y	LGT	Written/ Viva voce	
AN25.6	Mention development of aortic arch arteries, SVC, IVC and coronary sinus	K	KH	N	LGT	Written/ Viva voce	
AN25.7	Identify structures seen on a plain x-ray chest (PA view)	K,S	SH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN25.8	Identify and describe in brief a barium swallow	K,S	SH	N	LGT, Demonstration, Practical	Written/ Viva voce	
AN25.9	Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	K,S	SH	Y	Demonstration, Practical	Viva voce/ skill assessment	
Topic 26: Skull osteology		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN26.1	Describe & demonstrate anatomical position of skull, Identify and locate individual skull bones in skull	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.2	Describe & demonstrate the features of norma frontalis, verticalis, occipitalis, lateralis and basalis	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.3	Describe & demonstrate cranial cavity, its subdivisions, foramina and structures passing through them	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.4	Describe & demonstrate morphological features of mandible	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.5	Describe & demonstrate features of typical and atypical cervical vertebrae (atlas and axis)	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.6	Explain the concept of bones that ossify in membrane	K	KH	N	LGT	Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN26.7	Describe & demonstrate the features of the 7th cervical vertebra	K,S	SH	N	LGT, Demonstration	Viva voce	
Topic 27: Scalp		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN27.1	Describe & demonstrate the layers of scalp, its blood supply, nerve supply and surgical importance.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN27.2	Describe emissary veins with its role in the spread of infection from extracranial route to intracranial venous sinuses	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written	
Topic 28: Face & parotid region		**Number of Competencies (10)**			**Number of competencies for certification: (NIL)**		
AN28.1	Describe & demonstrate muscles of facial expression and their nerve supply	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN28.2	Describe sensory innervation of face	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN28.3	Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN28.4	Describe & demonstrate branches of facial nerve with distribution	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN28.5	Describe cervical lymph nodes and lymphatic drainage of head, face and neck	K	KH	Y	LGT	Written/ Viva voce	
AN28.6	Identify superficial muscles of face, their nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN28.7	Explain the anatomical basis of facial nerve palsy	K	KH	Y	LGT	Written	
AN28.8	Explain surgical importance of deep facial vein	K	KH	Y	LGT	Written	
AN28.9	Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN28.10	Explain the anatomical basis of Frey's syndrome	K	KH	N	LGT	Written	
	Topic 29: Posterior triangle of neck	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN29.1	Describe and demonstrate the boundaries, subdivisions and contents of posterior triangle of neck	K, S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN29.2	Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN29.3	Explain anatomical basis of Erb's & Klumpke's palsy	K	KH	Y	LGT, Demonstration	Written	
AN29.4	Explain anatomical basis of wry neck	K	KH	N	LGT, Demonstration	Written	
AN29.5	Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2)scalenus anterior, 3) scalenus medius & 4) levator scapulae	K,S	SH	N	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
	Topic: 30 Cranial cavity	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN30.1	Describe the cranial fossae & identify related structures	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN30.2	Describe & identify major foramina with structures passing through them	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN30.3	Describe & identify dural folds & dural venous sinuses	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN30.4	Describe clinical importance of dural venous sinuses	K	KH	Y	LGT	Written	
AN30.5	Explain effect of pituitary tumours on visual pathway	K	KH	N	LGT	Written	
Topic 31: Orbit		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN31.1	Describe & identify extra ocular muscles of eyeball, along with a note on its attachment, action and clinical anatomy	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN31.2	Describe & demonstrate nerves and vessels in the orbit	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN31.3	Describe anatomical basis of Horner's syndrome	K	KH	N	LGT	Written	
AN31.4	Describe the components of lacrimal apparatus	K	KH	Y	LGT	Written	
AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	K	KH	Y	LGT	Written	
Topic 32: Anterior Triangle		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN32.1	Describe boundaries and subdivisions of anterior triangle	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN32.2	Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
	Topic 33: Temporal and Infratemporal regions	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN33.1	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.2	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.3	Describe & demonstrate articulating surface, type & movements of temporomandibular joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.4	Explain the clinical significance of pterygoid venous plexus	K	KH	Y	LGT	Written	
AN33.5	Describe the features of dislocation of temporomandibular joint	K	KH	N	LGT	Written	
	Topic 34: Submandibular region	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN34.1	Describe and demonstrate the superficial and deep structures, muscles, nerves, vessels, and glands in the submandibular region	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/Viva/ Skill Assessment	
AN34.2	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibularganglion	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN34.3	Describe the basis of formation of submandibular stones	K	KH	N	LGT	Written	
	Topic 35: Deep structures in the neck	**Number of Competencies (10)**			**Number of competencies for certification: (NIL)**		
AN35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia	K	KH	Y	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN35.2	Describe & demonstrate location, parts, borders, surfaces, relations, blood supply & applied anatomy of thyroid gland. Also describe the parathyroid glands in brief.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.3	Demonstrate & describe the origin, parts, course & branches subclavian artery	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.4	Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.5	Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.6	Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.7	Describe the course and branches of IX, X, XI & XII nerve in the neck	K	KH	Y	LGT	Written	
AN35.8	Describe the anatomically relevant clinical features of Thyroid swellings	K	KH	N	LGT, Demonstration	Written	
AN35.9	Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	K	KH	N	LGT	Written	
AN35.10	Describe the fascial spaces of neck	K	KH	N	LGT	Written	
Topic 36: Mouth, Pharynx & Palate		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN36.1	Describe and demonstrate the structures of the vestibule of the mouth and oral cavity proper.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN36.2	Describe the 1) morphology, relations, blood supply andapplied anatomy of palatine tonsil 2) composition of soft palate	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written	
AN36.3	Describe and demonstrate the muscles, nerve supply, blood supply and lymphatic drainage of the pharynx	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN36.4	Describe the components and functions of Waldeyer's lymphatic ring	K	KH	Y	LGT	Written	
AN36.5	Describe the pharyngeal spaces. Also describe the boundaries and clinical significance of pyriform fossa	K	KH	N	LGT	Written	
AN36.6	Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess	K	KH	N	LGT	Written	
AN36.7	Describe the clinical significance of Killian's dehiscence	K	KH	N	LGT	Written	
	Topic 37: Cavity of Nose	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN37.2	Describe location and functional anatomy of paranasal sinuses	K	KH	Y	LGT, Practical, Demonstration	Written	
AN37.3	Describe anatomical basis of sinusitis & maxillary sinus tumours	K	KH	N	LGT	Written	
	Topic 38: Larynx	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN38.1	Describe & demonstrate the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN38.2	Describe the anatomical aspects of laryngitis	K	KH	N	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury	K	KH	N	LGT	Written	
	Topic 39: Tongue	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN39.1	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN39.2	Explain the anatomical basis of hypoglossal nerve palsy	K	KH	N	LGT	Written	
	Topic 40: Organs of hearing and equilibrium	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN40.1	Describe & identify the parts, blood supply and nerve supply of external ear	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN40.3	Describe the features of internal ear	K	KH	N	LGT	Written	
AN40.4	Explain anatomical basis of otitis externa and otitis media	K	KH	N	LGT	Written	
AN40.5	Explain anatomical basis of myringotomy	K	KH	N	LGT	Written	
	Topic 41: Eyeball	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN41.1	Describe & demonstrate parts and layers of eyeball	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN41.2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	K	KH	N	LGT	Written	
AN41.3	Describe the position, nerve supply and actions of intraocular muscles	K	KH	N	LGT, Practical, Demonstration	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	Topic 42: Back Region	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN42.1	Describe and demonstrate the contents of the vertebral canal	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN42.2	Describe & demonstrate the boundaries and contents of Suboccipital triangle	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN42.3	Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis	K	KH	N	LGT	Written	
	Topic 43: Head & neck Joints, Histology, Development, Radiography & Surface marking	**Number of Competencies (9)**			**Number of competencies for certification: (NIL)**		
AN43.1	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN43.2	Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN43.3	Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland	K,S	SH	N	LGT, Practical	Written/ skill assessment	
AN43.4	Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN43.5	Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	
AN43.6	Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve	K,S	SH	N	Practical, Demonstration	Viva voce/ skill assessment	
AN43.7	Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x- ray of paranasal sinuses	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	
AN43.8	Describe the anatomical route used for carotid angiogram and vertebral angiogram	K	KH	N	LGT	Viva voce/ skill assessment	
AN43.9	Identify anatomical structures in carotid angiogram and vertebral angiogram	K,S	SH	N	Practical, Demonstration	Viva voce/ skill assessment	
Topic 44: Anterior abdominal wall		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN44.1	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.2	Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.3	Describe the formation of rectus sheath and its contents	K	KH	Y	LGT, Practical, Demonstration,	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN44.4	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.5	Explain the anatomical basis of inguinal hernia.	K	KH	Y	LGT	Written/ Viva voce	
AN44.6	Describe & demonstrate attachments of muscles of anterior abdominal wall	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.7	Describe common abdominal incisions with example and their clinical importance	K	KH	N	LGT	Written	
	Topic 45: Posterior abdominal wall	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN45.1	Describe Thoracolumbar fascia, its different layers, their attachments and extents	K	KH	Y	LGT	Written	
AN45.2	Describe & demonstrate Lumbar plexus, its root value, formation, branches and clinical anatomy (compression/ injury to the rootlets of lumber plexus)	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN45.3	Describe and demonstrate back muscles, nerve supply and action	K	KH	N	LGT	Written	
	Topic 46: Male external genitalia	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN46.2	Describe parts of Epididymis	K	KH	Y	LGT, Dissection	Written/ Viva voce	
AN46.3	Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)	K	KH	Y	LGT, Dissection	Written/ Viva voce	
AN46.4	Explain the anatomical basis of Varicocele	K	KH	N	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN46.5	Explain the anatomical basis of Phimosis & Circumcision	K	KH	N	LGT	Written	
	Topic 47: Abdominal cavity	**Number of Competencies (14)**			**Number of competencies for certification: (NIL)(NIL)**		
AN47.1	Describe & demonstrate horizontal and vertical tracing of peritoneum. Also describe boundaries and recesses of Lesser & Greater sac.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.2	Name & identify various peritoneal folds & pouches with its explanation .	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.3	Explain anatomical basis of Ascites & Peritonitis	K	KH	N	LGT	Written	
AN47.4	Explain anatomical basis of Subphrenic abscess	K	KH	N	LGT	Written	
AN47.5	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN47.6	Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach	K	KH	N	LGT	Written	
AN47.7	Demonstrate boundaries of Calot's triangle and mention its clinical importance	K	KH	N	LGT	Written	
AN47.8	Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN47.9	Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.10	Describe sites of portosystemic anastomosis, describe its applied anatomy andanatomical correlations	K	KH	Y	LGT	Written	
AN47.11	Explain the anatomic basis of hematemesis& caput medusae in portal hypertension	K	KH	Y	LGT,	Written/ Viva voce	
AN47.12	Describe important nerve plexuses of posterior abdominal wall	K	KH	N	LGT	Written	
AN47.13	Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN47.14	Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	K	KH	N	LGT	Written	
	Topic 48: Pelvic wall and viscera	**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
AN48.1	Describe & demonstrate the position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of important male & female pelvic viscera.	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN48.2	Describe & identify the muscles of Pelvic diaphragm.	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN48.3	Describe & demonstrate the origin, course, important relations and branches of internal iliac artery	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN48.4	Describe the branches of sacral plexus	K	KH	Y	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN48.5	Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation	K	KH	N	LGT	Written	
AN48.6	Describe the neurological basis of Automatic bladder	K	KH	Y	LGT	Written	
AN48.7	Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	K	KH	N	LGT	Written	
AN48.8	Mention the structures palpable during vaginal & rectal examination	K	KH	N	LGT	Written	
	Topic 49: Perineum	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN49.1	Describe& demonstrate the superficial & deep perineal pouch (boundaries and contents)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill	
AN49.2	Describe & identify Perineal body	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.3	Describe & demonstrate Perineal membrane in male & female	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.4	Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.5	Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	K	KH	N	LGT	Written	
	Topic 50: Vertebral column	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN50.1	Describe the curvatures of the vertebral column	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN50.2	Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN50.3	Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)	K	KH	Y	LGT	Written/ Viva voce	
AN50.4	Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	K	KH	N	LGT	Written	
	Topic 51: Sectional Anatomy	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN51.1	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN51.2	Describe & identify the midsagittal section of male and female pelvis	K	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
	Topic 52: Histology & Embryology	**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
AN52.1	Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	
AN52.2	Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN52.3	Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum	K,S	SH	N	LGT, Demonstration, Practical	Written/ skill assessment	
AN52.4	Describe the development of anterior abdominal wall	K	KH	N	LGT	Written/ Viva voce	
AN52.5	Describe the development and congenital anomalies of Diaphragm	K	KH	Y	LGT	Written/ Viva voce	
AN52.6	Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut	K	KH	Y	LGT	Written/ Viva voce	
AN52.7	Describe the development of Urinary system	K	KH	Y	LGT	Written/ Viva voce	
AN52.8	Describe the development of male & female reproductive system	K	KH	Y	LGT	Written/ Viva voce	
	Topic 53: Osteology	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN53.1	Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups	K,S	SH	Y	LGT, Demonstration, Practical	Viva voce/ skill assessment	
AN53.2	Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
AN53.3	Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
AN53.4	Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	K,S	SH	N	LGT, DOAP	Viva voce/ skill assessment	
	Topic 54: Radiodiagnosis	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN54.1	Describe the principles of Plain and contrast radiography, Computed Tomography, Magnetic Resonance Imaging, Positron Emission Tomography scan and Digital subtraction angiography	K	KH	Y	LGT	Viva voce/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN54.2	Describe & identify features of plain X ray abdomen	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
AN54.3	Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
AN54.4	Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	K	KH	N	LGT	Viva voce	
Topic 55: Surface marking		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN55.1	Demonstrate the surface marking of Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring, McBurney's point, Renal Angle & Murphy's point	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Viva voce/ skill assessment	
AN55.2	Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Viva voce/ skill assessment	
Topic 56: Meninges & CSF		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN56.1	Describe & identify various layers of meninges with its extent & modifications	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN56.2	Describe formation, circulation and absorption of CSF with its applied anatomy.	K	KH	Y	LGT	Written/ Viva voce	
Topic 57 : Spinal Cord		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN57.1	Identify external features of spinal cord	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN57.2	Describe extent of spinal cord in child & adult with its clinical implication	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN57.3	Draw & label transverse section of spinal cord at mid-cervical & mid-thoracic level	K	KH	Y	LGT	Written/ Viva voce	
AN57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord	K	KH	Y	LGT	Written/ Viva voce	
AN57.5	Describe the anatomical basis of clinical conditions affecting the grey and white matter of spinal cord (Brown-Sequard Syndrome, Poliomyelitis, Amyotrophic lateral sclerosis or motor neuron disease, Syringomyelia, Hereditary sensory neuropathy, Subacute Combined degeneration, Transversemyelitis, paraplegia)	K	KH	Y	LGT	Written/ Viva voce	
	Topic 58 : Medulla Oblongata	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN58.1	Identify external features of medulla oblongata	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN58.2	Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) Inferior Olivary Nucleus	K	KH	Y	LGT	Written/ Viva voce	
AN58.3	Describe cranial nerve nuclei in medulla oblongata with their functional group	K	KH	Y	LGT	Written/ Viva voce	
AN58.4	Describe the anatomical basis of clinical conditions affecting the medulla oblongata (Medial and lateral medullary syndromes, Crossed Diplegia)	K	KH	Y	LGT	Written/ Viva voce	
	Topic 59: Pons	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN59.1	Identify external features of pons	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN59.2	Draw & label transverse section of pons at the upper and lower level	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN59.3	Describe cranial nerve nuclei in pons with their functional group	K	KH	Y	LGT	Written/ Viva voce	
AN59.4	Describe the anatomical basis of clinical conditions affecting the pons (Locked-in syndrome, Pontine haemorrhage, Foville syndrome, Raymond syndrome, Millard-Gubler syndrome)	K	KH	Y	LGT	Written/ Viva voce	
Topic 60: Cerebellum		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN60.1	Describe & demonstrate external & internal features of cerebellum	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN60.2	Describe connections of cerebellar cortex and intracerebellar nuclei	K	KH	Y	LGT	Written/ Viva voce	
AN60.3	Describe anatomical basis of cerebellar dysfunction	K	KH	N	LGT	Written	
Topic 61: Midbrain		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN61.1	Identify external & internal features of midbrain	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN61.2	Describe internal features of midbrain at the level of superior & inferior colliculus	K	KH	Y	LGT	Written/ Viva voce	
AN61.3	Describe the anatomical basis of clinical conditions affecting the midbrain (Weber syndrome, Benedikt syndrome, Parinaud syndrome)	K	KH	Y	LGT	Written/ Viva voce	
Topic 62: Cranial nerve nuclei & Cerebral hemispheres		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN62.1	Describe the cranial nerve nuclei with its functional components	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere. Also describe the effects of damage to various functional areas of cerebral cortex	K,S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN62.3	Describe the white matter of cerebrum. Also describe the effects of damage to corpus callosum and different parts of internal capsule	K	KH	Y	LGT	Written/ Viva voce	
AN62.4	Describe the parts & major connections of basal ganglia & limbic lobe. Also explain the anatomical basis of Parkinson's disease, chorea, athetosis and ballismus	K	KH	Y	LGT	Written/ Viva voce	
AN62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus	K	KH	Y	LGT	Written/ Viva voce	
AN62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis	K/S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
	Topic 63: Ventricular System & Special sensory pathways	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN63.1	Describe & demonstrate parts, boundaries & features of 3rd, 4th & lateral ventricle	K,S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN63.2	Describe anatomical basis of congenital hydrocephalus	K	KH	N	LGT	Written	
AN63.3	Describe the olfactory, visual, auditory and gustatory pathways	K	KH	Y	LGT	Written/ Viva voce	
	Topic 64: Histology & Embryology	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN64.2	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN64.3	Describe various types of open neural tube defects with its embryological basis	K	KH	N	LGT	Written/ Viva voce	
Topic 65: Epithelium histology		**Number of Competencies (2)**			**Number of competencies for certification: (01)**		
AN65.1	Identify epithelium under the microscope & describe the various types that correlate to its function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN65.2	Describe the ultrastructure of epithelium	K	KH	N	LGT, Practical	Written	
Topic 66: Connective tissue histology		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN66.1	Describe & identify various types of connective tissue with functional correlation	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	LGT, Practical	Written	
Topic 67: Muscle histology		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN67.1	Describe & identify various types of muscle under the microscope	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN67.2	Classify muscleand describe the structure-function correlation of the same	K	KH	Y	LGT	Written	
AN67.3	Describe the ultrastructure of muscular tissue	K	KH	N	LGT	Written	
Topic 68: Nervous tissue histology		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN68.1	Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve under the microscope	K/S	SH	Y	LGT, Practical	Written/ skill assessment	
AN68.2	Describe the structure-function correlation of neuron	K	KH	Y	LGT	Written	
AN68.3	Describe the ultrastructure of nervous tissue	K	KH	N	LGT	Written	
Topic 69: Blood Vessels		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN69.1	Identify elastic & muscular blood vessels, capillaries under the microscope	K,S	SH	Y	LGT, Practical	Skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN69.2	Describe the various types and structure-function correlation of blood vessel	K	KH	Y	LGT	Written	
AN69.3	Describe the ultrastructure of blood vessels	K	KH	Y	LGT	Written	
	Topic 70: Glands & Lymphoid tissue	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil andcorrelatethe structure with function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
	Topic: Bone & Cartilage - Number of Competencies (2)						
AN71.1	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
	Topic 72: Integumentary System	**Number of Competencies (1)**			**Number of competencies for certification: (NIL)**		
AN72.1	Identify the skin and its appendages under the microscope and correlate the structure with function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
	Topic: 73 Chromosomes	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN73.1	Describe the structure of chromosomes with classification	K	KH	Y	LGT, Practical	Written	
AN73.2	Describe technique of karyotyping with its applications	K	KH	Y	LGT, Practical	Written	
AN73.3	Describe the Lyon's hypothesis	K	KH	Y	LGT, Practical	Written	
	Topic 74: Patterns of Inheritance	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN74.1	Describemendelian and non-mendelian inheritance. Explain various modes of inheritance with examples.	K	KH	Y	LGT, Practical	Written	
AN74.2	Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance	K	KH	Y	LGT, Practical	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN74.3	Describemultifactorial inheritance with examples	K	KH	Y	LGT, Practical	Written	
AN74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant	K	KH	N	LGT, Practical	Written	
Topic 75: Principles of Genetics, Chromosomal Aberrations & Clinical Genetics		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN75.1	Describe the structural and numerical chromosomal aberrations	K	KH	Y	LGT, Practical	Written	
AN75.2	Explain the terms mosaics and chimeras with example	K	KH	N	LGT	Written	
AN75.3	Describe the genetic basis & clinical features of: Prader Willi syndrome, Edward syndrome, Patau syndrome, Down syndrome, Turner Syndrome & Klinefelter syndrome	K	KH	N	LGT	Written	
AN75.4	Describe genetic basis of variation: polymorphism and mutation	K	KH	Y	LGT	Written	
AN75.5	Describe in brief: genetic counseling, karyotyping, FISH, PCR and genetic sequencing	K	KH	Y	LGT	Written	
Topic 76: Introduction to embryology		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN76.1	Describe the stages of human life	K	KH	Y	LGT	Written	
AN76.2	Explain the terms- phylogeny, ontogeny, trimester, viability	K	KH	Y	LGT	written	
Topic 77: Gametogenesis and fertilization		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN77.1	Describe the uterine changes occurring during the menstrual cycle	K	KH	Y	LGT	Written	
AN77.2	Describe the synchrony between the ovarian and menstrual cycles	K	KH	Y	LGT	Written	
AN77.3	Describe spermatogenesis and oogenesis along with diagrams	K	KH	Y	LGT	Written	
AN77.4	Describe the stages and consequences of fertilisation	K	KH	Y	LGT	Written	
AN77.5	Describe the anatomical principles underlying contraception	K	KH	Y	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN77.6	Describe teratogenic influences: fertility and sterility, surrogate motherhood, social significance of “sex- ratio”.	K	KH	N	LGT	Written	
	Topic 78 : Second week of development	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN78.1	Describe cleavage and formation of blastocyst	K	KH	Y	LGT	Written	
AN78.2	Describe the development of trophoblast	K	KH	Y	LGT	Written	
AN78.3	Describe the process of implantation & common abnormal sites of implantation	K	KH	Y	LGT	Written	
AN78.4	Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate	K	KH	Y	LGT	Written	
AN78.5	Describe abortion, decidual reaction, pregnancy test	K	KH	Y	LGT	Written	
	Topic 79: 3rd to 8th week of development	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN79.1	Describe the formation & fate of the primitive streak	K	KH	Y	LGT	Written	
AN79.2	Describe formation & fate of notochord	K	KH	Y	LGT	Written	
AN79.3	Describe the process of neurulation	K	KH	Y	LGT	Written	
AN79.4	Describe the development of somites and intra-embryonic coelom	K	KH	Y	LGT	Written	
AN79.5	Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects	K	KH	N	LGT	Written	
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	K	KH	N	LGT	Written	
	Topic 80: Fetal membranes	**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
AN80.1	Describe formation, functions & fate of chorion, amnion, yolk sac, allantois & decidua	K	KH	Y	LGT	Written	
AN80.2	Describe formation & structure of umbilical cord	K	KH	Y	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN80.3	Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier	K	KH	Y	LGT	Written	
AN80.4	Describe embryological basis of twinning in monozygotic & dizygotic twins	K	KH	Y	LGT	Written	
AN80.5	Describe role of placental hormones in uterine growth & parturition	K	KH	Y	LGT	Written	
AN80.6	Explain embryological basis of estimation of fetal age.	K	KH	N	LGT	Written	
AN80.7	Describe various types of umbilical cord attachments	K	KH	N	LGT	Written	
Topic 81: Prenatal Diagnosis		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN81.1	Describe various invasive & non-invasive methods of prenatal diagnosis	K	KH	Y	LGT	Written	
AN81.2	Describe indications, process and disadvantages of amniocentesis	K	KH	Y	LGT	Written	
AN81.3	Describe indications, process and disadvantages of chorion villus biopsy	K	KH	Y	LGT	Written	
Topic 82: Ethics in Anatomy		**Number of Competencies (1)**			**Number of competencies for certification: (NIL)**		
AN 82.1	Demonstrate respect, and follow the correct procedure when handling cadavers and other biologic tissue	A	SH	Y	SGT	NIL	

PHYSIOLOGY (CODE: PY)

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PHYSIOLOGY (Topics = 12, Competencies = 136)							
	Topic 1: General Physiology	**Number of competencies: (7)**			**Number of competencies that require certification : (NIL)**		
PY1.1	Describe the structure and functions of a cell, intercellular communication and their applications in Clinical care and research	K	KH	Y	LGT	Written/Viva voce	
PY1.2	Discuss the principles of homeostasis and feedback mechanism	K	KH	Y	LGT	Written/Viva voce	
PY1.3	Describe apoptosis (programmed cell death) , explain its mechanism of action and physiological significance.	K	KH	Y	LGT SGT	Written/Viva voce	
PY1.4	Describe and discuss various transport mechanisms across cell membranes	K	KH	Y	LGT Student Seminar	Written/Viva voce/Assignments	
PY1.5	Describe the fluid compartments of the body, its ionic composition & measurement methods	K	KH	Y	LGT	Written/Viva voce	
PY1.6	Describe the concept of pH & Buffer systems in the body	K	KH	Y	LGT SGT	Written/Viva voce	
PY1.7	Describe the molecular basis of resting membrane potential (RMP) and generation of action potential in a nerve fibre	K	KH	Y	LGT SGT/Tutorial	Written/Viva voce	
	Topic 2: Haematology	**Number of competencies: (13)**			**Number of competencies that require certification : (01)**		
PY2.1	Describe the composition and functions of blood and its components	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.2	Discuss the origin, forms, variations and functions of plasma proteins and its clinical implications	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.3	Describe the physiological structure, synthesis , functions and breakdown of Hemoglobin. Discuss its variants and clinical significance.	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.4	Describe Erythropoiesis & discuss its regulation in physiological and pathological situations	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.5	Describe anaemias, polycythemia & jaundice and discuss its physiological principles of management	K	KH	Y	LGT SGT, Student Seminar, ECE	Written/Viva voce	
PY2.6	Describe the formation of WBC (Leucopoiesis), structure and function of various WBC types and their regulatory mechanisms	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY2.7	Discuss 'Immunity' in terms of its types, development, regulation and physiological significance	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY2.8	Describe the formation of platelets (thrombopoiesis), structure, functions and variations.	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.9	Describe hemostasis, coagulation pathways, mechanism of action of anticoagulants and briefly discuss pathophysiological aspects of bleeding & clotting disorders (e.g. hemophilia, purpura)	K	KH	Y	LGT SGT, ECE- Visit to blood bank Flipped Classroom	Written/Viva voce	
PY2.10	Discuss types of blood groups, clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	LGT SGT,ECE- Visit to blood bank	Written/Viva voce	
PY2.11	Estimate Hb, RBC, TLC, DLC, Blood groups, BT/CT, RBC indices	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	01 EACH
PY2.12	Describe the test to measure Erythrocyte Sedimentation Rate (ESR), Osmotic fragility, Hematocrit, and interpret its findings	K	KH	Y	Demonstration	Written /Viva voce/OSPE (Question station)	
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration	Written /Viva voce	
	Topic 3: Nerve and Muscle Physiology	**Number of competencies: (12)**			**Number of competencies that require certification : (01)**		
PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss nerve growth factors	K	KH	Y	LGT	Written/Viva voce	
PY3.2	Describe the types, functions, properties of nerve fibers including strength duration curve, chronaxie and rheobase	K	KH	Y	LGT	Written/Viva voce	
PY3.3	Classify nerve injury and discuss the mechanism of degeneration and regeneration in peripheral nerves	K	KH	Y	LGT	Written/Viva voce	
PY3.4	Describe the microscopic structure of neuro-muscular junction (NMJ) and mechanism of neuromuscular transmission	K	KH	Y	LGT SGT	Written/Viva voce	
PY3.5	Discuss the applied aspects of neuromuscular junction : myasthenia gravis, Lambert Eaton syndrome and neuromuscular blocking agents.	K	KH	Y	LGT SGT, ECE (classroom / hospital setting)	Written/Viva voce	
PY3.6	Describe the different types of muscle fibres, their structure and physiological basis of action potential	K	KH	Y	LGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY3.7	Describe properties, action potential and molecular basis of muscle contraction in skeletal muscle	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY3.8	Describe properties, action potential and molecular basis of muscle contraction in smooth muscle	K	KH	Y	LGT SGT	Written/Viva voce	
PY3.9	Describe the mode of muscle contraction (isometric and isotonic), energy source, muscle metabolism and gradation of muscular activity	K	KH	Y	LGT	Written/Viva voce	
PY3.10	Enumerate and briefly discuss myopathies	K	KH	Y	LGT SGT	Written/Viva voce	
PY3.11	Perform Ergography and calculate the work done by a skeletal muscle	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	01 EACH
PY3.12	Observe with Computer assisted learning (i) Amphibian nerve -muscle experiments (ii) Amphibian cardiac experiments	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	
	Topic 4: Gastro-intestinal Physiology	**Number of competencies: (12)**			**Number of competencies that require certification : (01)**		
PY4.1	Describe the functional anatomy of digestive system	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.2	Enumerate various Gastrointestinal hormones (GI) hormones, discuss their functions and regulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.3	Describe the composition, mechanism of secretion, functions, and regulation of saliva	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.4	Describe the composition, mechanism of secretion, functions, and regulation of gastric juice. Discuss various gastric function tests	K	KH	Y	LGT	Written/Viva voce	
PY4.5	Describe the composition, mechanism of secretion, functions, and regulation of pancreatic juice including various pancreatic exocrine function tests	K	KH	Y	LGT	Written/Viva voce	
PY4.6	Describe the composition, mechanism of secretion, functions, and regulation of intestinal juices	K	KH	Y	LGT	Written/Viva voce	
PY4.7	Describe the physiology of digestion and absorption of nutrients	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.8	Describe GIT movements, its regulation and physiological significance including defecation reflex and the role of dietary fibres	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY4.9	Describe the structure , functions and secretion of liver and gallbladder with elaboration of various liver function tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.10	Describe the Gut-Brain Axis and its physiological significance	K	KH	Y	LGT SGT,	Written/Viva voce	
PY4.11	Discuss (in brief) the applied physiology of GIT viz. Peptic ulcer, gastroesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	K	KH	Y	LGT SGT, ECE, SDL	Written/Viva voce	
PY4.12	Obtain relevant history and conduct correct General and Clinical examination of the abdomen in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAP (Simulation or real life setting)	Skill assessment/ Viva voce/OSCE	1
Topic 5: Cardiovascular Physiology		**Number of competencies: (16)**			**Number of competencies that require certification : (03)**		
PY5.1	Describe the functional anatomy of heart including chambers and coronary circulation	K	KH	Y	LGT	Written/Viva voce	
PY5.2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.3	Describe generation and conduction of cardiac impulse along with the conduction pathway (including pacemaker potential).	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.4	Discuss the physiological events occurring during the cardiac cycle, concurrent pressure volume changes, generation of heart sounds and murmur	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY5.5	Describe the physiology of electrocardiogram (E.C.G), the cardiac axis and its applications	K	KH	Y	LGT SGT, ECE	Written/Viva voce/OSCE (Question station)	
PY5.6	Discuss physiological variations in ECG waveforms, abnormal waveforms and intervals , arrhythmias, heart blocks and myocardial Infarction	K	KH	Y	LGT SGT/Student seminars/ECE	Written/Viva voce	
PY5.7	Discuss haemodynamics of circulatory system	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY5.8	Describe and discuss local and systemic cardiovascular regulatory mechanisms	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.9	Describe heart rate, factors affecting heart rate, and its regulation	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY5.10	Describe cardiac output, factors affecting cardiac output and its regulation.	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.11	Describe blood pressure, factors affecting blood pressure and its regulation	K	KH	Y	LGT SGT/Student seminars	Written/Viva voce	
PY5.12	Describe & discuss regional circulation including microcirculation, lymphatic circulation, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.13	Describe the patho-physiology of shock, syncope heart failure with physiological basis of its management	K	KH	Y	LGT SGT / Student seminars	Written/Viva voce	
PY5.14	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	S	SH	Y	DOAPs (Simulation or real life setting)	Practical/OSPE/ Viva voce	3
PY5.15	Record and interpret normal ECG in a volunteer or simulated environment	S	SH	Y	DOAPs (Simulation or real life setting)	Practical/OSPE/ Viva voce	1
PY5.16	Obtain relevant history and conduct General and Clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	1
Topic 6: Respiratory Physiology		**Number of competencies: (13)**			**Number of competencies that require certification : (02)**		
PY6.1	Describe the functional anatomy of respiratory tract and non-respiratory functions of lungs	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.2	Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities (Static and Dynamic)	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.3	Describe the alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.4	Discuss the transport of respiratory gases viz Oxygen and Carbon dioxide across lungs and whole body	K	KH	Y	LGT	Written/Viva voce	
PY6.5	Describe the chemoreceptors (peripheral and central) and neural centres of respiration including chemical and neural regulation of respiration	K	KH	Y	LGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY6.6	Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis, asphyxia, drowning, periodic breathing and oxygen therapy	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.7	Discuss various lung function tests and their clinical significance in obstructive and restrictive lung diseases	K	KH	Y	LGT SGT, Tutorials Flipped Classroom	Written/Viva voce	
PY6.8	Discuss the physiology of high altitude and acclimatization	K	KH	Y	LGT	Written/Viva voce	
PY6.9	Discuss the physiology of deep sea diving and decompression sickness	K	KH	Y	LGT	Written/Viva voce	
PY6.10	Perform Spirometry and interpret the findings (Digital / Manual)	S	P	Y	DOAPs	Skill assessment/ Viva voce/OSCE	1
PY6.11	Describe principles and methods of artificial respiration	S	SH	Y	DOAPs	Practical/OSPE/ Viva voce	
PY6.12	Obtain relevant history and conduct correct General and Clinical examination of the respiratory system in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAPs	Practical/OSPE/ Viva voce	1
PY6.13	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment	S	SH	Y	DOAPs	Practical/OSPE/ Viva voce	
Topic 7: Renal Physiology		**Number of competencies: (9)**			**Number of competencies that require certification : (NIL)**		
PY7.1	Describe the functional anatomy of kidney and non-excretory functions of kidney	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.2	Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system	K	KH	Y	LGT	Written/Viva voce	
PY7.3	Describe the mechanism of urine formation involving processes of filtration (Glomerular filtration), tubular reabsorption & secretion.	K	KH	Y	LGT SGT, Student Seminar	Written/Viva voce	
PY7.4	Describe the mechanism of urine concentration and dilution (Counter current Multiplier & Exchanger)	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY7.5	Describe the renal regulation of fluid and electrolytes & acid-base balance	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY7.7	Describe cystometry and discuss the normal cystometrogram	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.8	Discuss various Renal Function Tests with its physiological significance and clinical implication of Renal clearance	K	KH	Y	LGT SGT, ECE (classroom / hospital setting)	Written/Viva voce	
PY7.9	Discuss the role of artificial kidneys, dialysis and indications of renal transplant	K	KH	Y	LGT	Viva voce	
Topic 8: Endocrine Physiology		**Number of competencies: (7)**			**Number of competencies that require certification : (NIL)**		
PY8.1	Describe the functional anatomy of endocrine glands, mechanism of hormonal action (steroid and peptide) and hypothalamus pituitary axis {HPA}	K	KH	Y	LGT Flipped Classroom	Written/Viva voce	
PY8.2	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.3	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of thyroid gland including thyroid function tests	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY8.4	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of adrenal gland and its function tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.5	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of parathyroid gland with emphasis of physiology of bone and calcium metabolism	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY8.6	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pancreatic gland including pancreatic function tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.7	Describe the physiology of Thymus & Pineal Gland	K	KH	Y	LGT	Written/Viva voce	
Topic 9: Reproductive Physiology		**Number of competencies: (10)**			**Number of competencies that require certification : (NIL)**		

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY9.1	Explain sex determination, sex differentiation and their abnormalities and discuss the effects of removal of gonads on physiological functions	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.2	Describe and discuss puberty: onset, progression, stages; early and delayed puberty.	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.3	Describe the functional anatomy of male reproductive system, functions of testis, spermatogenesis and discuss the functions and regulations of testosterone hormone	K	KH	Y	LGT SGT	OSPE/Viva voce	
PY9.4	Describe the functional anatomy of female reproductive system: functions of ovary and its hormones (estrogen and progesterone) ; hormonal regulation by hypothalamic pituitary gonadal (HPG axis)	K	KH	Y	LGT SGT , Student Seminar	Written/Viva voce	
PY9.5	Discuss the menstrual cycle, uterine and ovarian changes, hormonal regulation and its implications in reproductive physiology	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY9.6	Enumerate male and female contraceptive methods, rationale of its prescription, side effects and its advantages & disadvantages	K	KH	Y	LGT SGT, ECE,SDL	Written/Viva voce	
PY9.7	Discuss the physiology of pregnancy, parturition & lactation.	K	KH	Y	LGT SGT, Flipped Classroom	Written/Viva voce	
PY9.8	Discuss the physiological basis of various pregnancy tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.9	Discuss the hormonal changes and their effects during perimenopause and menopause	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.10	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility	K	KH	Y	LGT SGT, visit to IVF lab	Written/Viva voce	
	Topic 10: Central Nervous System Physiology	**Number of competencies: (20)**			**Number of competencies that require certification : (02)**		
PY10.1	Describe and discuss the functional organization of central nervous system (brain and spinal cord)	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.2	Describe the functional anatomy of peripheral nervous system (including autonomic nervous system)	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.3	Classify the neurotransmitters and discuss the chemical transmission in the nervous system.	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY10.4	Discuss the classification, functions and properties of synapse	K	KH	Y	LGT SGT ,Student Seminar	Written/Viva voce	
PY10.5	Discuss the classification, functions and properties of reflex	K	KH	Y	LGT SGT, Student Seminar	Written/Viva voce	
PY10.6	Discuss the classification, functions and properties of receptors	K	KH	Y	LGT SGT , Student Seminar	Written/Viva voce	
PY10.7	Discuss somatic sensations, ascending tracts, (sensory tracts) and applied aspects of sensory system	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.8	Discuss Physiology of pain including pain pathways and its modulation with special emphasis on gate control theory of pain	K	KH	Y	LGT SGT, visit to pain clinic	Written/Viva voce	
PY10.9	Describe the course of descending tracts (pyramidal and extra pyramidal), its clinical implications including difference in Upper motor neuron (UMN)and lower motor neuron (LMN) lesions	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.10	Discuss types and clinical features of spinal cord lesions (complete, incomplete transection and hemisection - Brown Sequard syndrome)	K	KH	Y	LGT SGT, Tutorials, ECE	Written/Viva voce	
PY10.11	Describe functional anatomy of cerebellum, its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.12	Discuss functional anatomy of basal ganglia , its connections, functions and Clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.13	Discuss the mechanism of maintenance of tone, posture and control of body movements	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY10.14	Discuss functional anatomy of thalamus , its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.15	Discuss functional anatomy of hypothalamus and limbic system , its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.16	Discuss functional anatomy of cerebral cortex, its connections, functions and Clinical abnormalities	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.17	Discuss the structure and functions of reticular activating system, sleep physiology and EEG waveforms during sleep wake cycle	K	KH	Y	LGT SGT, visit to sleep lab	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY10.18	Discuss the physiological basis of memory, learning and speech and clinical alterations in speech	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.19	Obtain relevant history and conduct correct General and Clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes in a normal volunteer or simulated environment	S	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	4 (each)
PY10.20	Obtain relevant history and conduct correct General and Clinical examination of the cranial nerves in a normal volunteer or simulated environment	S	P	Y	DOAPs	OSCE/Viva voce	1 (each)
	Topic 11: Special Senses	**Number of competencies: (7)**			**Number of competencies that require certification : (NIL)**		
PY11.1	Describe and discuss physiology of smell and its applied aspects	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.2	Describe and discuss physiology of taste sensation and applied aspects	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.3	Describe and discuss functional anatomy of ear and auditory pathways, vestibular apparatus and equilibrium	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.4	Discuss physiology of hearing, pathophysiology of deafness and hearing tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.5	Discuss functional anatomy of eye, visual pathway, light and pupillary reflex and clinical implication of lesions in visual pathway	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.6	Discuss physiology of image formation, refractive errors and physiological principles of its management	K S	P	Y	LGT SGT ECE	Written/Viva voce	
PY11.7	Discuss physiology of vision including colour vision and colour blindness	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
	Topic 12: Integrated Physiology	**Number of competencies: (10)**			**Number of competencies that require certification : (NIL)**		
PY12.1	Describe physiological mechanism of temperature regulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.2	Discuss adaptation to altered temperature (heat and cold) and mechanism of fever, cold injuries and heat stroke	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.3	Discuss cardio-respiratory and metabolic adjustments during exercise (isometric and isotonic), effects of physical training under different environmental conditions (heat and cold)	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY12.4	Discuss physiological consequences of sedentary lifestyle; metabolic and endocrinal consequences of obesity & metabolic syndrome.	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.5	Describe physiology of Infancy, Interpret growth charts and anthropometric assessment of infants	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY12.6	Describe and discuss physiology of aging, role of free radicals and antioxidants	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.7	Discuss the concept, criteria for diagnosis of Brain death and its implications	K	KH	Y	Small group teaching	Practical/OSPE/ Viva voce	
PY12.8	Discuss the physiology of yoga and meditation	K	KH	Y	Small group teaching	Practical/OSPE/ Viva voce	
PY12.9	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	
PY12.10	Demonstrate Basic Life Support in a simulated environment	S	SH	Y	DOAPs, Simulation lab (Simulation or real life setting)	Skill assessment/ Viva voce/OSCE	

BIOCHEMISTRY (CODE: BC)

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Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BIOCHEMISTRY (Topics = 14, Competencies = 84)							
	Topic 1: Basic Biochemistry	**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**		
BC1.1	Describe the molecular and functional organization of a cell and its sub-cellular components and composition and functions of Biological membranes.	K	KH	Y	LGT, SGT / **SDL**	Written assessment/ Viva voce	
	Topic 2: Enzyme	**Number of competencies:(05)**			**Number of competencies that require certification:(NIL)**		
BC2.1	Explain fundamental concepts of enzyme, isoenzyme and coenzyme. Enumerate the main classes of IUBMB nomenclature.	K	KH	Y	LGT, **SGT**	Written assessment / Viva voce	
BC2.2	Describe and explain the basic principles of enzyme activity	K	KH	Y	LGT, **SGT**	Written assessment / Viva voce	
BC2.3	Describe and discuss enzyme Inhibition and role of enzymes or drugs as Inhibitors, and enzymes as therapeutic agents.	K	KH	Y	LGT, Casediscussion SGT	Written assessment / Viva voce	
BC2.4	Describe and discuss the clinical utility of various serum enzymes in laboratory and their use as markers of various pathological conditions.	K	KH	Y	LGT, SGT, Flipped class room	Written assessment / Viva voce	
BC2.5	Interpret laboratory results of enzymes in various disorders.	K	KH	Y	SGT, DOAPs, Case Studies	Written assessment/ Viva voce/ Case studies, OSPE	
	Topic 3: Chemistry and Metabolism of Carbohydrates	**Number of competencies:(06)**			**Number of competencies that require certification:(NIL)**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC3.1	Discuss and differentiate monosaccharides, di-saccharides and polysaccharides with examples, their importance as energy fuel, structural element, and storage molecule in human body.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC3.2	Describe the digestion, absorption and transport of carbohydrates from food along with its disorders.	K	KH	Y	LGT, SGT, SDL	Written/Viva-voce	
BC3.3	Define and briefly describe the pathways of carbohydrate metabolism and their regulation (glycolysis, gluconeogenesis, TCA, and significance of glycogen metabolism and HMP shunt), with associated disorders.	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
BC3.4	Describe and discuss the regulation, functions and integration of minor Carbohydrate Metabolism pathway briefly along with associated diseases /disorders.	K	KH	Y	LGT, SGT	Written/Viva-voce	
BC3.5	Discuss the mechanism and significance of blood glucose regulation (Glucose homeostasis) in health and disease. Describe the types, Biochemical changes, complications and laboratory investigations related to diabetes & other carbohydrate metal disorders.	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
BC3.6	Interpret the results of analytes associated with metabolism of carbohydrates and other laboratory investigations related to disorders of carbohydrate metabolism.	K	KH	Y	LGT, SGT Case Studies / SDL, Flipped class room	Written/ Viva voce/ Case Studies /OSPE	
Topic 4 : Chemistry and Metabolism of Lipids		**Number of competencies: (08)**			**Number of competencies that require certification:(NIL)**		
BC4.1	Describe and discuss main classes of lipids and their functions.	K	KH	Y	LGT, SGT /SDL	Written/Viva voce	
BC4.2	Describe the digestion and absorption of dietary lipids and its (associated disorders.	K	KH	Y	LGT, SGT /SDL	Written /Viva voce	
BC4.3	Describe and discuss the fatty acid oxidation, metabolism of ketone bodies along with their clinical significance.	K	KH	Y	LGT, SGT	Written /Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC4.4	Describe metabolism of Triglycerides and cholesterol metabolism along with its regulation and clinical significance.	K	KH	Y	LGT, SGT	Written /Viva voce	
BC4.5	Describe the metabolism of lipoproteins with brief overview of lipoprotein structure, their interrelations & relations with atherosclerosis.	K	KH	Y	LGT, SGT	Written /Viva voce	
BC4.6	Discuss Biological role and therapeutic applications of Eicosanoids and their Inhibitors.	K	KH	Y	LGT, SGT, Flipped class room	Written /Viva voce	
BC4.7	Describe Fatty liver, cholelithiasis and obesity.	K	KH	Y	LGT, SGT, Case Studies/Scenarios/SDL	Written /Viva voce	
BC4.8	Interpret laboratory results of analytes associated with metabolism of lipids	K	KH	Y	LGT, SGT, case studies, Flipped class room	Written/Viva voce/ case studies/OSPE	
Topic 5: Chemistry & Metabolism of Proteins and Immunology		**Number of competencies:(09)**			**Number of competencies that require certification:(NIL)**		
BC5.1	Discuss briefly structure of amino acids and classify amino acids on the basis of Nutritional and Metabolic significance.	K	KH	Y	LGT, SGT/SDL	Written / Viva voce	
BC5.2	Discuss classification of proteins, structural organization, functions and clinical aspects.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.3	Describe the digestion and absorption of dietary proteins	K	KH	Y	LGT, SGT / SDL	Written / Viva voce	
BC 5.4	Describe plasma proteins and their functions and brief overview of normal and abnormal electrophoretic pattern of serum proteins, acute phase proteins.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.5	Describe the structure, functions and disorders of Immunoglobulins with brief description of cellular and humoral Immunity.	K	KH	Y	LGT, SGT	Written / Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC 5.6	Describe the formation, transport, detoxification of Ammonia, Ammonia toxicity and its clinical significance.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.7	Describe the specialized products formed from the amino acids Glycine, Phenylalanine, Tyrosine, Tryptophan, and Methionine, branched chain amino acids and Arginine and the inborn errors associated with them. Discuss new-born screening.	K/S	KH/SH	Y	LGT, SGT	Written / Viva voce	
BC5.8	Describe the structure and functions of haem in the body and describe the processes involved in its metabolism with emphasis on jaundice and describe porphyrin metabolism.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC5.9	Describe the major types of Hemoglobin and its types, derivatives & variants found in the body and their physiological / pathological relevance	K	KH	Y	LGT, SGT	Written / Viva voce	
Topic 6: Extracellular Matrix		**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
BC6.1	Enumerate the functions and components of the extracellular matrix (ECM).	K	KH	Y	LGT, SGT	Written/Viva voce	
BC6.2	Discuss the involvement of ECM components in health and disease.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC6.3	Describe protein targeting & sorting along with its associated disorders.	K	KH	N	LGT, SGT	Written/Viva voce	
Topic 7: **Integration of Metabolism and Biological Oxidation**		**Number of competencies: (02)**			**Number of competencies that require certification: (NIL)**		
BC7.1	Describe the integration of various metabolic processes in the body (Carbohydrate, Lipid, and Protein).	K	KH	Y	LGT, SGT	Written/viva voce	
BC7.2	Describe the Biochemical processes involved in generation of energy in cells.	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 8: Vitamins and Nutrition		**Number of competencies: (06)**			**Number of competencies that require certification: (NIL)**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC8.1	Describe the Biochemical role of vitamins in the body and explain the manifestations of their deficiency	K	KH	Y	LGT, SGT	Written/Viva voce	
BC8.2	Discuss the importance of various dietary components and explain importance of dietary fibre.	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
BC8.3	Describe the types and causes of protein energy malnutrition and its effects.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC8.4	Provide dietary advice for optimal health in childhood and adult in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.	K/S/C	KH	Y	LGT, SGT / role play	Written/Viva voce	
BC8.5	Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obese / metabolic syndrome	K	KH	Y	LGT, SGT	Written/Viva voce	
BC8.6	Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance).	K	KH	Y	LGT, SGT, Home assignment	Written/Viva voce	
Topic 9: Minerals, electrolytes, Water and Acid base balance		**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
BC9.1	Describe the dietary sources, absorption, transport, and metabolism, Biochemical functions of Iron, Calcium and copper with its associated clinical disorders.	K	KH	Y	LGT, SGT, Home Assignment, Flipped class room	Written/Viva voce	
BC9.2	Discuss Magnesium, Zinc and Phosphorus along with its clinical significance and discuss the functions of trace elements	K	KH	Y	LGT, SGT, Home Assignment. / SDL	Written/Viva voce	
BC9.3	Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with them	K	KH	Y	LGT, SGT / SDL	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
Topic 10: Molecular Biology		**Number of competencies:(07)**			**Number of competencies that require certification:(NIL)**		
BC10.1	Describe nucleotides and nucleic acids and their clinical significance.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC10.2	Describe briefly synthesis of purines in the body with special stress on salvage pathway.	K	KH	N	LGT, SGT /SDL	Written/Viva voce	
BC10.3	Describe the degradation of purines and its significance with associated disorders.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC10.4	Describe in brief the major steps involved in Replication, Transcription, and translation.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC 10.5	Describe the types of DNA repair, gene mutations and associated disorders.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC10.6	Describe basic mechanism of regulation of gene expression	K	KH	Y	LGT, SGT /SDL	Written/Viva voce	
BC10.7	Describe applications of molecular technologies like recombinant DNA technology and PCR in the diagnosis and treatment of diseases. Briefly discuss microarray, FISH, CRISPR	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
Topic 11: Organ Function tests and Hormones		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
BC 11.1	Describe the function tests of kidney, liver, thyroid and adrenal glands and their clinical significance. Interpret the function tests report.	K,S	KH/SH	Y	LGT, SGT, Case studies / SDL	Written/Viva voce/Case studies/OSPE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC11.2	Enumerate the hormones and markers related to reproduction and reproductive health and their clinical interpretation (For e.g. LH, FSH, Prolactin, beta-HCG, Estrogen Progesterone, testosterone and AMH. Discuss importance of prenatal screening.	K	KH	Y	LGT, SGT / SDL, Flipped class room	Written/Viva voce/Direct observation/ OSPE	
Topic 12: Xenobiotic, oxidative stress and antioxidants		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
BC12.1	Describe the role of xenobiotics in disease in health and disease	K	KH	Y	LGT, SGT	Written/Viva voce	
BC12.2	Describe the anti-oxidant defense systems in the body.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC12.3	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis	K	KH	Y	LGT, SGT / SDL	Written/Viva voce	
Topic 13: Miscellaneous		**Number of competencies:(05)**			**Number of competencies that require certification:(NIL)**		
BC 13.1	Describe oncogenesis, oncogenes & its activation with focus on p53 & apoptosis.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC 13.2	Describe various Biochemical tumor markers and the Biochemical basis of cancer therapy.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC13.3	Discuss briefly on HIV and Biochemical changes in AIDS.	K	KH	N	LGT, SGT	Written/Viva voce	
BC13.4	Discuss metabolism of alcohol with Biochemical changes and effects of chronic alcoholism.	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
BC13.5	Describe the role of Artificial Intelligence in clinical Biochemistry laboratory practices.	K	KH	N	LGT, SGT / SDL	Written/ Viva voce Logbook Record	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
Topic 14: Biochemical Laboratory test / Practical Number of competencies: (24) Number of competencies that require certification : (11)							
14.1	Describe commonly used laboratory apparatus equipments, good / safe laboratory practice, Biomedical hazards & waste management.	K	KH	Y	LGT, SGT	Written/ Viva voce/ Direct observation	
BC14.2	Describe estimation of pH by pH meter or ABG analyser and interpretation of results with paper case scenarios.	K	KH	Y	LGT, SGT / Case discussion	Written/ Viva voce Direct observation/ OSPE	
BC14.3	Describe the physical properties, chemical constituents of normal urine and abnormal constituents of urine and Perform urine analysis to determine normal and abnormal constituents (including dipsticks method demonstration).	K,S	KH/P	Y	LGT, Small group Discussion / DOAP	Written/ Viva voce / DOAP	2
BC14.4	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states and prepare a urine report.	S	P	Y	DOAPs	Skill assessment / OSPE	1
BC14.5	Describe screening of urine for inborn errors & describe the use of paper chromatography	K	KH	Y	LGT, SGT	Written/ Viva voce/ Direct observation/ OSPE	
BC14.6	Describe the principles of Colorimetry & Spectrophotometry.	K	KH	Y	LGT, SGT	Written / Viva voce / Direct observation	
BC14.7	Perform estimation of glucose by manual / semi-automated analyzer method and demonstrate glucometer usage. and interpretation of results with clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.8	Perform estimation of urea and calculate BUN and interpretation of results in clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC14.9	Perform the estimation of serum creatinine and calculate creatinine clearance.	S	P	Y	DOAP	Skill Assessment OSPE	1
BC14.10	Perform estimation of uric acid in serum and interpretation of results with clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.11	Perform estimation of serum proteins, albumin and A:G ratio	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.12	Perform the estimation of serum total cholesterol	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.13	Perform the estimation of serum Bilirubin by manual / semi-automated analyzer method.	S	P	Y	DOAP	Skills assessment / OSPE	1
BC14.14	Describe estimation of calcium and phosphorus and interpretation of results.	K	KH	Y	LGT, SGT, Demonstration	Written / Viva voce	
BC14.15	Describe the estimation Triglycerides, HDL and calculation of LDL and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written / Viva voce / OSPE (LDL Calculate)	
BC14.16	Describe the estimation of SGOT (AST) / SGPT (ALT) / Alkaline Phosphatase and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC14.17	Describe briefly various body fluids & discuss the composition of CSF.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC14.18	Observe use of commonly used equipments/techniques in Biochemistry laboratory including: • pH meter • Paper chromatography of amino acid • Protein electrophoresis	K	KH	Y	Demonstration (SGT) & Lab Visit	Written/ Viva voce / Direct observation	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	• TLC, PAGE • Electrolyte analysis by ISE • ABG analyzer • ELISA • Immunodiffusion • Autoanalyser • DNA isolation from blood/ tissue						
BC14.19	Explain the basis and rationale of Biochemical tests done and interpretation of laboratory results in the following conditions: - Diabetes mellitus, - Obesity, - dyslipidaemia, - Fatty liver - myocardial infarction, - Renal failure, - Gout, - Nephrotic syndrome, - Jaundice, - Liver diseases, pancreatitis, disorders of acid- base balance, - Thyroid disorders, - Genetic disorders - Nutritional disorders - Vitamin deficiency disorders, - Disorders of Mineral metabolism, - Disorders of electrolyte metabolism.	K	KH	Y	LGT/ Clinical case studies discussion (SGT)	Written/ Viva voce / OSPE / Case studies interpretation	
BC14.20	Describe & Identify Pre-Analytical (especially order of draw, tourniquet technique), Analytical, Post Analytical errors.	S	SH	Y	LGT, SGT DOAP(clinical lab), Skill lab	Written/ Viva voce/ OSPE/ Direct observation/ OSPE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC14.21	Describe Quality control and identify basic L J charts in Clinical biochemistry lab.	S	SH	Y	LGT / SGT / DOAP (clinical lab)	Written/ Viva voce/ OSPE/ Direct observation/ OSPE	1
BC14.22	Describe performance of OGTT, Glucose Challenge Test and HbA1c and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written/ Viva voce/ OSPE /Direct observation/ Case studies interpretation.	
BC14.23	Calculate energy content of different food Items, identify food items with high and low glycaemic index and explain the importance of these in the diet.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC 14.24	Observe, Interpret and discuss the baseline, diagnostic, prognostic, and discharge investigations of clinical biochemistry.	K,A,S,C	SH	Y	ECE-SGT(Bedside/ Ward visit/ Medical record department	Logbook, reflections	

PHARMACOLOGY (CODE: PH)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PHARMACOLOGY (Topics = 10, Competencies = 92)							
Topic 1: General Pharmacology (GP)		**Number of competencies: (13)**			**Number of competencies that require certification : (04)**		
PH1.1	Describe the principles of pharmacology, pharmacotherapeutics and define various terms in pharmacology.	K	KH	Y	LGT/ SGT	Written, Tutorial	
PH1.2	Describe evidence based medicine and rational use of drugs & discuss why these are relevant to therapeutics.	K	KH	Y	LGT/ SGT	Written, Tutorial	
PH1.3	Describe nomenclature of drugs i.e., generic, branded drugs and scheduled drugs, explaining the utility of the nomenclature, cost effectiveness and use.	K	KH	Y	LGT/ Practical	Written, Tutorial	
PH1.4	Identify the common drug formulations and drug delivery systems, demonstrate their use and describe their advantages and disadvantages.	K,S,A,C	KH, SH	Y	SGT, DOAP, role plays/ Simulations (mannequins, hybrid, computer)	Written/ Viva voce / Tutorial /OSPE/ direct observation	1
PH1.5	Describe various routes of drug administration, their advantages and disadvantages and demonstrate administration of, e.g., SC, IV, IM, SL, rectal, spinal, sublingual, intranasal sprays and inhalers	K, S,A,C	KH, SH	Y	SGT, videos, DOAP, simulations, hybrid models	Written/ Viva voce/Tutorial/ OSPE	2
PH1.6	Describe salient features of absorption, distribution, metabolism and excretion of drugs with emphasis on various routes of drug administration	K	KH	Y	LGT/ SGT, CBL, Simulations, practical exercises, Graphs, Flipped class room	Written/ Tutorial	
PH1.7	Describe various principles of mechanism of action of drugs	K	KH	Y	LGT, Small Group discussion, Demonstration	Written/ Viva voce/ OSPE	
PH1.8	Demonstrate the mechanism of action & effects of common prototype drugs on human body using computer assisted learning	S,K	KH/SH	Y	Animations, videos	OSPE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PH 1.9	Select rational drug combinations based on the pharmacokinetics/pharmacodynamic (PK/PD) parameters with emphasis on synergism, antagonism, 'therapeutic efficacy', risk benefit ratio	K	KH,SH	Y	LGT, SGT, demonstrations, CBL, Flipped class room	Written, OSPE, Viva voce/Tutorial	
PH1.10	Describe changes in pharmacology of drugs in geriatric, pediatric and special situations such as Pregnancy, lactation, hepatic and renal disorders and adjust the drug treatment accordingly.	K, S, A	KH, SH	Y	LGT, CBL/ PBL	Written/ Tutorial, OSPE	
PH 1.11	Define Adverse Drug Reactions (ADRs) & their types. Identify the ADRs in the given case scenario and assess causality.	K	KH, SH	Y	LGT, SGT, CBL	Written, Viva voce/Tutorial, OSPE	
PH1.12	Define Pharmacovigilance its principles and demonstrate ADR reporting	K, S, C	KH, SH	Y	LGT, DOAP, CBL, Can be covered in Pandemic module sessions	Written/ Viva voce OSPE	2
PH1.13	Identify and describe the management of drug interactions	K	KH, SH	Y	LGT, SGT/ CBL	Written/Viva/ Tutorial/ Prescription audit	1
Topic 2 : Autonomic & Peripheral Nervous system, Autacoids		**Number of competencies: (8)**			**Number of competencies that require certification : (NIL)**		
PH2.1	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of adrenergic and antiadrenergic drugs	K	KH	Y	LGT, SGT	Written/ Tutorial	
PH2.2	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of cholinergic and anticholinergic drugs and demonstrate OPC poisoning management	K,S,A,C	KH, SH	Y	LGT, SGT, Simulations, Role play, CBL	Written/ Tutorial/ Direct observations	
PH 2.3	Explain the rationale and demonstrate the emergency use of various sympathetic and parasympathetic drug agonists/antagonists (like Noradrenaline/ Adrenaline/Dopamine/Dobutamine, Atropine) in case-based scenarios	S,A,C	KH,SH	Y	CBL, SGT, Simulations,	Written/ Viva/ Tutorial/ OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PH2.4	Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of skeletal muscle relaxants	K	KH	Y	LGT, SGT	Written/ Viva voce/Tutorial	
PH2.5	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of local anaesthetics (LA) & demonstrate various methods of administration of LA	K, S	KH, SH	Y	LGT, SGT, DOAP in simulated environment	Written/ Viva voce/Tutorial, OSPE	
PH2.6	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of anti-histaminics and explain management of common cold & allergic rhinitis.	K	KH	Y	LGT, CBL	Written/ Viva voce/ Tutorial	
PH2.7	Define pain and enumerate drugs used for pain. Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of analgesics including NSAIDs (except opioids)	K	KH	Y	LGT, SGT, Flipped class room	Written/ Viva voce/Tutorial	
PH2.8	Devise management plan for a case of gout, arthritis and migraine using appropriate drugs	K, S	KH, SH	Y	LGT, CBL, PBL, prescription writing	Written/ Viva voce/Tutorial, prescription audit	
Topic 3: Central Nervous system		**Number of competencies: (09)**			**Number of competencies that require certification : (NIL)**		
PH3.1	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of General anaesthetics, and pre-anaesthetic medications	K	KH	Y	LGT, SGT, Flipped class room	Written/ Tutorial	
PH3.2	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of different sedative and hypnotic agents and explain pharmacological basis of selection and use of different sedative and hypnotic agents	K	KH	Y	LGT, CBL/ PBL, prescription writing	Written/ Viva voce/Tutorial, prescription audit	
PH3.3	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used in epilepsy and devise management plan for a case of uncontrolled seizure	K, S,A,C	KH, SH	Y	LGT, CBL/PBL/ Bedside teaching, prescription writing	Written/ Viva voce/ Tutorial, prescription audit	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PH3.4	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs of opioid analgesics and explain the special instructions for use of opioids.	K, C	KH, SH	Y	LGT, CBL/PBL/ Bedside teaching	Written/ Viva voce/Tutorial/ Direct observation	
PH3.5	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for depression and psychosis, devise management plan for depressive and psychotic disorders	K, A, C	KH, SH	Y	LGT, CBL/PBL/ Bedside teaching, prescription writing	Written/ Viva voce/ prescription audit	
PH3.6	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used in anxiety disorders. Discuss about general goals of Pharmacotherapy for the management of above disorders	K, A,C	KH, SH	Y	LGT, CBD, Bedside teaching, prescription writing	Written/ Viva voce, prescription audit	
PH3.7	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for Parkinsonism and other neurodegenerative disorders. Write a prescription to manage a case of drug induced parkinsonism	K	KH	Y	LGT, Problem/ case-based group discussion, prescription writing	Written/ Viva voce, prescription audit	
PH3.8	Identify and manage methanol poisoning and chronic ethanol intoxication	K, S,A,C	KH, SH	Y	LGT, SGT, CBL, bedside teaching	Written/ Viva voce, direct observation	
PH3.9	Describe the drugs that are abused and cause addiction (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences). Explain the process and steps for management of drug de addiction	K	KH	Y	LGT, SGT/CBL, Simulations, Flipped class room	Written/ Viva voce/Tutorial	
Topic 4: Cardiovascular system & Blood		**Number of competencies: (11)**			**Number of competencies that require certification : (NIL)**		
PH4.1	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for different anaemias and thrombocytopenia.	K	KH	Y	LGT, integration module, CBL, SDL, Prescription writing	Written/ Tutorial/ Prescription audit	Anemia Integration

PH4.2	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs acting on coagulation system (Coagulants/anticoagulants) and devise a plan to monitor therapy and management of adverse effects.	K, A, C	KH, SH	Y	LGT, SGT, bedside teaching	Written/Viva voce/ Direct observation	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH4.3	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of Fibrinolytics and Antifibrinolytic agents.	K	KH	Y	LGT, SGT	Written/Tutorial	
PH4.4	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of Antiplatelets agents.	K	KH	Y	LGT, CBL, Flipped class room	Written/Tutorial	
PH4.5	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of Diuretics, antidiuretics-vasopressin and analogues	K	KH	Y	LGT, SGT	Written/ Tutorial	
PH4.6	Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs modulating renin angiotensin aldosterone system.	K	KH	Y	LGT, SGT	Written/ Tutorial	
PH4.7	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of hypertension Devise plan for pharmacologic management of hypertension with Diabetes, Pregnancy induced hypertension and hypertensive emergency and urgency	K	KH	Y	LGT, CBL/PBL, prescription writing, Simulations	Written/ Viva voce/Tutorial prescription audit/ Direct observations	
PH4.8	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease and devise management plan for a patient of acute myocardial Infarction	K, S,A,C	KH, SH	Y	LGT, CBL, Simulations, prescription writing	Written/ Viva voce/ Direct observations, audit of prescriptions	

PH4.9	Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of heart failure. Devise management plan for heart failure patients and describe the strategies to prevent long term complications of heart failure.	K, A,C	KH	Y	LGT, CBL, PBL, SDL, prescription writing	Written/ Viva voce/ prescription audit	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PH4.10	Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for cardiac arrhythmias. Devise a plan to manage a patient with supraventricular, ventricular arrhythmias, cardiac arrest and fibrillations	K,S, A,C	KH, SH	Y	LGT, SGT, CBL, SDL, simulations, prescription writing	Written/ Viva voce/ direct observation/ prescription audit	
PH4.11	Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of dyslipidaemias and enumerate drugs leading to dyslipidaemias	K	KH	Y	LGT, SGT, CBL	Written/ Viva voce/ Tutorial	
Topic 5: Respiratory system		**Number of competencies: (2)**			**Number of competencies that require certification : (NIL)**		
PH5.1	Devise management of various stages of Bronchial asthma, COPD. Explain salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of Bronchial asthma, COPD and Rhinitis.	K, A, C	KH /SH	Y	LGT, SGT, Demonstration of devices used in Br Asthma, Prescription writing	Written/ Viva voce/ OSPE/ Direct observation, Prescription audit	
PH5.2	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for cough management. Describe management of dry & productive cough	K	KH	Y	LGT , SGT, Flipped class room	Written/ Tutorial	
Topic 6: Gastrointestinal system		**Number of competencies: (5)**			**Number of competencies that require certification : (NIL)**		
PH6.1	Explain types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used in Acid peptic diseases including Peptic Ulcers, GERD and devise a management plan for a case of peptic ulcer.	K,	KH	Y	LGT, SGT, Prescription writing	Written/ Viva voce/ Tutorial, Prescription audit	

PH6.2	Describe types, salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of prokinetics & drugs used for emesis and antiemetics.	K	KH	Y	LGT, SGT	Written/ Viva voce/ Tutorial	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH6.3	Describe salient pharmacokinetics, pharmacodynamics, therapeutic uses, adverse drug reactions of drugs used for the management of diarrhoea and devise pharmacotherapeutic plan to manage acute and chronic diarrhoea in adults and children.	K, C	KH, SH	Y	LGT, SGT, bed side teaching, SDL	Written/ Viva voce, Direct observation, OSPE	
PH6.4	Describe salient pharmacokinetics, pharmacodynamics, adverse drug reactions of drugs used for the management of constipation and devise management plan for a case of constipation	K, C	KH, C	N	LGT, SGT, Direct observation	Written/ Tutorial	
PH6.5	Describe salient pharmacokinetics, pharmacodynamics, adverse drug reactions of drugs used for the management of Inflammatory Bowel Disease and Irritable Bowel Disorders	K	KH	N	LGT, SGT	Written/ Tutorial	
	Topic 7: Endocrine system	**Number of competencies: (9)**			**Number of competencies that require certification : (NIL)**		
PH7.1	Describe the types, kinetics, dynamics, adverse drug reactions of drugs used in diabetes mellitus and devise management for an obese and non-obese diabetic patient & also comment on prevention of complications of the diabetes.	K,A	KH	Y	LGT, CBL, SDL, SGT, Prescription writing	Written/ Viva voce/Tutorial, prescription audit	
PH7.2	Describe the types, kinetics, dynamics, therapeutic uses, adverse drug reactions of drugs used in osteoporosis and devise management plan for a female and male patient with osteoporosis.	K	KH	Y	LGT, CBL/ SDL/ SGT, Prescription writing	Written/ Viva voce/ Tutorial, prescription audit	
PH7.3	Describe the types, kinetics, dynamics, adverse drug reactions of drugs used in thyroid Disorders and devise a management plan for a case with thyroid Disorder.	K	KH	Y	LGT, CBL, SDL, SGT, Prescription writing	Written/ Tutorial, prescription audit	

PH7.4	Describe the types, mechanisms of action, adverse effects, indications and contraindications of the drugs which modify the release of Anterior Pituitary Hormones	K	KH	N	LGT	Written/ Tutorial	
PH7.5	Explain the types, kinetics, dynamics, adverse effects, indications and contraindications of corticosteroids and communicate to patient the appropriate use of corticosteroids	K, A,C	KH, SH	Y	LGT, SGT/ CBL/ PBL, Role play	Written/ Viva voce/tutorial, Direct observation, OSPE	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH7.6	Describe the types, kinetics, dynamics, adverse effects, indications and contraindications of Androgens and drugs used of Erectile Dysfunction	K	KH	N	LGT, SGT/ CBL	Written/ tutorial	
PH7.7	Explain the types, kinetics, dynamics, adverse effects, indications and contraindications of drugs which modify Female Reproductive Functions including contraceptives. Explain the important instruction for use of female and male contraceptives	K,A,C	KH, SH	Y	LGT, SDL, CBL, PBL, SGT, Role play	Written/ Viva voce/tutorial, OSPE	
PH7.8	Explain the types, kinetics, dynamics, adverse effects, indications and contraindications of uterine relaxants and stimulants.	K	KH	Y	LGT, CBL, Flipped class room	Written/ Tutorial	
PH7.9	Describe drugs used for treatment of Infertility	K	KH	Y	LGT, CBL	Written/ tutorial	
Topic 8: Chemotherapy		**Number of competencies: (11)**			**Number of competencies that require certification : (NIL)**		
PH8.1	Discuss general principles of chemotherapy with emphasis on antimicrobial resistance.	K	KH	Y	LGT	Written/ Viva voce/tutorial, Pandemic module	
PH8.2	Discuss rational use of antimicrobials and describe antibiotic stewardship program of your institute	K	KH	Y	LGT, CBL, SGT, Flipped class room	Written/ Viva voce/tutorial, Pandemic module	

PH8.3	Explain the kinetics, dynamics, adverse effects, indications of the following antibacterial drugs: Sulphonamides Quinolones, Beta-lactams, Macrolides, Tetracyclines, Aminoglycosides, and newer antibacterial drugs	K	KH	Y	LGT, CBL, SGT	Written/ Viva voce/tutorial	
PH8.4	Devise a pharmacotherapeutic plan for UTI and STDs and explain to patient the instructions and adherence to treatment.	K,A,C	KH, SH	Y	LGT, CBL/ PBL/ SGT, role play, Prescription writing	Written/Viva voce/tutorial, OSPE/ Prescription audit, Direct observation	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH8.5	Explain the types, kinetics, dynamics, therapeutic uses and adverse effects of drugs used in tuberculosis. Devise management plan for tuberculosis treatment in various categories.	K	KH, SH	Y	LGT, CBL, PBL, SDL, Prescription writing	Written/ Viva voce/tutorial, Prescription audit	
PH8.6	Discuss the types, Kinetics, dynamics, adverse effects for drugs used for Leprosy and outline management of Lepra reactions	K	KH	Y	LGT/CBL. Prescription writing	Written/ Viva voce/tutorial Prescription audit	
PH8.7	Discuss the types, Kinetics, dynamics, adverse effects of drugs used for following Protozoal / Vector borne diseases: 1. Amoebiasis 2. Kala-azar 3. Malaria 4. Filariasis	K	KH	Y	LGT SGT, CBL, Prescription writing	Written/Viva voce/tutorial, Prescription audit	
PH8.8	Explain the types, kinetics, dynamics, adverse effects of drugs used for fungal infections	K	KH	Y	LGT SGT, CBL, Prescription writing	Written/Viva voce/tutorial, Prescription	
PH8.9	Discuss the types, kinetics, dynamics, adverse effects of drugs used for Intestinal Helminthiasis	K	KH	Y	LGT SGT, CBL, Prescription writing	Written/Viva voce, Prescription	
PH8.10	Discuss the types, kinetics, dynamics, adverse effects, indications and contraindications of drugs used for viral diseases including HIV	K	KH	Y	LGT SGT, CBL, Prescription writing	Written/Viva voce/tutorial, Prescription	

PH8.11	Describe the types, kinetics, dynamics, adverse effects, indications and contraindications of anti-cancer drugs . Devise plan for amelioration of anticancer drug induced toxicity.	K	KH	N	LGT, SGT, CBL	Written/tutorial	
Topic 9: Miscellaneous		**Number of competencies: (7)**			**Number of competencies that require certification : (NIL)**		
PH9.1	Describe the types, kinetics, dynamics, therapeutic uses, adverse drug reactions of immunomodulators	K	KH	N	LGT/ SGT	Written/ Viva voce /tutorial	
PH9.2	Describe management of common drug poisonings, insecticides, common stings and bites	K	KH	Y	LGT, CBL, Simulations	Written/ Viva voce/tutorial, direct observations	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH9.3	Describe chelating agents and make a plan for management of heavy metal poisoning	K	KH	N	LGT, CBL	Written/ tutorial	
PH9.4	Describe basics of vaccine use and types of vaccines	K	KH	Y	SGT, LGT	Written/ tutorial	
PH9.5	Describe types, precautions and uses of antiseptics and disinfectants	K	KH	Y	SGT, LGT	Written/ tutorial	
PH9.6	Describe drugs used in various skin disorders like acne vulgaris, scabies , pediculosis, psoriasis including sunscreens	K	KH	N	LGT, Prescription writing	Written/ tutorial, Prescription audit	
PH9.7	Describe drugs used in glaucoma and other ocular disorders including topical (ocular) drug delivery systems	K	KH	N	LGT	Written/ tutorial	
Topic 10: Applied Pharmacology		**Number of competencies: (17)**			**Number of competencies that require certification : (7)**		
PH10.1	Compare and contrast different sources of drug information and update on latest information on drugs	K, C	KH, SH	Y	SGT, Practicals, Debate	Written, OSPE	2
PH10.2	Perform a critical evaluation of the drug promotional literature and Interpret the package insert information contained in the drug package	K	KH/SH	Y	CBL, SGT, Debate	Written, OSPE	1
PH10.3	To prepare and explain a list of P-drugs for a given case/condition	S,K,C	SH/KH	Y	CBL, SGT	OSPE, written	2

PH10.4	Describe parts of a correct, rational and legible prescription and write rational prescriptions for the provided condition. (examples of conditions to be used are given with other relevant competencies)	K	KH, SH	Y	Practical, DOAP, CBL, prescription writing	Written/ Viva voce/tutorial prescription audit	5
PH10.5	Identify and apply the legal and ethical regulation of prescribing drugs especially when prescribing for controlled drugs, off-label medicines, and prescribing for self, close family and friends	K	KH	Y	SGT, CBL	short note/ Viva voce/tutorial	
PH10.6	Perform a critical appraisal of a given prescription and suggest ways to improve it	SK	KH	Y	CBL, SGT, prescription critique	Written, Viva voce, OSPE	
PH10.7	Describe Pharmacogenomics and Pharmacoeconomics and manage genomic & economic issues in drug use and find out the price of given medication(s).	K	KH, SH	N	LGT, SGT,	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PH10.8	Describe Essential medicines, Fixed dose combination, Over the counter drugs and explain steps to choose essential medicines.	K	KH, SH	Y	SGT, DOAP, Debate	Written/ Viva voce/ OSPE	
PH10.9	Calculate the dosage of drugs for an individual patient, including children, elderly, pregnant and lactating women and patients with renal or hepatic dysfunction.	K,S	SH	Y	LGT, practical	Written/ OSPE	1
PH10.10	Identify when therapeutic drug monitoring is considered for a particular patient, determine timing of sampling and calculate revised dose.	K	KH	N	LGT, SGT/CBL	Written, OSPE	
PH10.11	Identify and apply drug Regulations principles, acts and legal aspects related of drug discovery and clinical use	K	KH/SH	Y	LGT, Visit to clinical research facility, Can be covered in Pandemic module sessions	Written/ Viva voce/ tutorial	
PH10.12	Describe overview of drug development including phases of clinical trials and Good Clinical Practice & reflect on the role of research in developing new drugs	K,A	KH	Y	LGT, SGT, Can be covered in Pandemic module sessions	Written/ Viva voce/ tutorial	

PH10.13	Demonstrate how to optimize interaction with pharmaceutical representative/media to get/disseminate authentic information on drugs	C,A,K	SH	Y	Role Play, Videos, actual encounters	Direct observation, OSPE	2
PH10.14	Communicate with the patient regarding optimal use of a drug therapy using empathy and professionalism e.g. Oral contraceptives, anti TB drugs etc.	A,C	SH	Y	Role Play, Videos, actual encounters	OSPE, Direct observation	
PH10.15	Describe methods to improve adherence to treatment and motivate patients with chronic diseases to adhere to the prescribed pharmacotherapy	K,C,A	SH	Y	Role Play, Videos, actual encounters	Written/ OSPE, Direct observation	2
PH10.16	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	K,C	KH,SH	Y	SGT, CBL	Written/ OSPE, Direct observation	
PH10.17	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	A,C	SH	Y	Role Play, Videos, actual encounters, Plays	OSPE, Direct observation	

PATHOLOGY (CODE: PA)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	N ɹmber required to certify P
	PATHOLOGY (Topics = 35, Competencies = 182)						
	Topic 1: Introduction to Pathology	**Number of competencies: (3)**			**Number of competencies that require certification : (NIL)**		
PA1.1	Describe the role of a pathologist in diagnosis and management of disease	K	K	Y	LGT	Written/ Viva voce	
PA1.2	Enumerate common definitions and terms used in Pathology and Describe the history and evolution of Pathology	K	K	Y	LGT, SGT	Written/ Viva voce	
PA1.3	Describe proliferation and cell cycle and concept of regenerative medicine along with role of stem cells.	K	K	Y	LGT, SGT	Written/ Viva voce	
	Topic 2: Cell Injury and Adaptation	**Number of competencies: (08)**			**Number of competencies that require certification: (NIL)**		
PA2.1	Describe the causes, mechanisms, types and effects of cell injury and their clinical significance	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.3	Describe morphological changes in intracellular accumulation of fats, proteins, carbohydrates, pigments	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.4	Describe and explain Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.5	Describe types and pathology of calcifications and gangrene	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.6	Describe cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia and carcinoma in situ	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA2.7	Describe the mechanisms of cellular aging and apoptosis	K	KH	N	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA2.8	Identify and describe various forms of cell injuries with their manifestations and consequences in gross and microscopic specimens	S	SH	Y	DOAP	Viva voce	
	Topic: 3 Inflammation	**Number of competencies:(04)**			**Number of competencies that require certification: (NIL)**		
PA3.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA3.2	Enumerate and describe the mediators of acute inflammation	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA3.3	Define and describe chronic inflammation including causes, types non-specific and granulomatous and enumerate examples of each	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA3.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	S	SH	Y	DOAP	Viva voce	
	Topic 4: Healing and repair	**Number of competencies: (01)**			**Number of competencies that require certification:(NIL)**		
PA4.1	Define and describe the process of repair and regeneration including wound healing and its types	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 5: Hemodynamic disorders	**Number of competencies: (06)**			**Number of competencies that require certification :(NIL)**		
PA5.1	Define and describe edema, its types, pathogenesis and clinical correlations	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA5.2	Define and describe hyperemia, congestion, hemorrhage	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA5.3	Define and describe shock, its pathogenesis and its stage	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA5.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA5.5	Define and describe Ischemia/infarction, embolism its types, etiology, morphologic changes and clinical effects	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA5.6	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	S	SH	Y	DOAP	Viva voce	
	Topic 6: Neoplastic disorders	**Number of competencies: (07)**			**Number of competencies that require certification: (NIL)**		
PA6.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, Biological, behavior and spread. Differentiate between benign from malignant neoplasms	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA6.2	Describe the molecular basis of cancer, role of genetic and epigenetic alterations with special emphasis on common cancers like breast/ colon	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA6.3	Define and classify the carcinogens and describe the process of different types of carcinogenesis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA6.4	Describe the effects of tumor on the host including para neoplastic syndrome	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA6.5	Describe laboratory diagnosis of cancer including molecular profiles of tumors, tumors markers and future of cancer diagnostics	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA6.6	Describe immunology and the immune response to cancer with its clinical significance – Immunotherapy	K	KH	N	LGT, SGT	Written/ Viva voce	
PA6.7	Identify and describe the gross and microscopic features of Benign and malignant neoplasm in a pathologic specimen	S	SH	Y	DOAP	Viva voce	
	Topic 7: Basic diagnostic cytology	**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**		
PA7.1	Describe the techniques of cytology, staining & diagnostic role of cytology and its application in clinical care	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 8: Immunopathology and AIDS	**Number of competencies : (06)**			**Number of competencies that require certification: (NIL)**		
PA8.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA8.2	Describe the mechanism of hypersensitivity reaction	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA8.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA8.4	Define autoimmunity. Enumerate autoimmune disorder and describe the pathogenesis of common autoimmune diseases	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA8.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA8.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 9: Amyloidosis	**Number of competencies: (02)**			**Number of competencies that require certification:(NIL)**		
PA9.1	Describe the pathogenesis and pathology of amyloidosis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA9.2	Identify and describe various forms of amyloidosis with their manifestations and consequences in gross and microscopic specimens	S	SH	Y	DOAP	Viva voce	
	Topic 10: Infections and Infestations	**Number of competencies: (05)**			**Number of competencies that require certification:(NIL)**		
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	LGT, SGT	Written/ Viva voce	
PA10.5	Define and describe the pathogenesis and pathology and laboratory findings in COVID	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 11: Genetic and pediatric diseases	**Number of competencies: (03)**			**Number of competencies that require certification :(NIL)**		
PA11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in with diagnostic modalities in childhood	K	KH	N	LGT, SGT	Written/ Viva voce	
PA11.2	Describe the pathogenesis and pathology of tumor and tumor like conditions in infancy and childhood	K	KH	N	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	K	KH	N	LGT, SGT	Written/ Viva voce	
	Topic 12: Environmental and nutritional diseases	**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco, alcohol and noise	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition, vitamins and starvation	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA12.3	Describe the pathogenesis of obesity and its consequences with special emphasis on metabolic syndrome	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 13: Introduction to hematology	**Number of competencies: (04)**			**Number of competencies that require certification:(1)**		
PA13.1	Describe hematopoiesis and extra medullary hematopoiesis and the role of anticoagulants in hematology	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA13.2	Define and classify anemia Enumerate and describe the investigation of anemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA13.3	Describe collection of specimens and identify coagulants and anticoagulant bulbs, instruments	S	SH`	Y	DEMO	Viva voce / OSPE	
PA13.4	Perform common haematological tests – Hb, RBC count, WBC count and DLC	S	SH`	Y	DEMO	Viva voce / OSPE	4
Topic 14: Microcytic anemia		**Number of competencies: (02)**			**Number of competencies that require certification:(1)**		
PA14.1	Describe iron metabolism and Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA14.2	Identify and describe the peripheral smear in microcytic Anemia	S	SH`	Y	DEMO	Viva voce / OSPE	1
	Topic 15: Macrocytic anemia	**Number of competencies: (03)**			**Number of competencies that require certification: (1)**		
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency and describe laboratory investigations of macrocytic anemia	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA15.2	Enumerate the differences and describe the etiology, laboratory features of megaloblastic anemia and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA15.3	Identify and describe the peripheral blood picture of macrocytic Anemia	S	SH`	Y	DEMO	Viva voce / OSPE	1
	Topic 16: Hemolytic anemia	**Number of competencies: (03)**			**Number of competencies that require certification: (01)**		
PA16.1	Define and classify hemolytic anemia and describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA16.2	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	1
PA16.3	Describe the etiology, pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia and different hemolytic Anemia's	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce	
	Topic 17: Aplastic anemia	**Number of competencies: (01)**			**Number of competencies that require certification:(NIL)**		
PA 17.1	Describe the etiology, pathogenesis and findings in aplastic Anemia and Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	K	K	N	LGT, SGT	Written/ Viva voce	
	Topic 18: Leukocyte disorders	**Number of competencies: (02)**			**Number of competencies that require certification:(NIL)**		
PA18.1	Enumerate and describe the causes of leukocytosis leucopenia lymphocytosis and leukemoid reactions	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA 18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 19: Lymph node and spleen	**Number of competencies: (06)**			**Number of competencies that require certification:(NIL)**		
PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA19.2	Describe the pathogenesis and pathology of tuberculous Lymphadenitis	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA19.3	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	S	SH	Y	DOAP	Skill assessment	
PA19.4	Enumerate and differentiate the causes of splenomegaly	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA19.5	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	S	SH	Y	DOAP	Viva voce	
PA19.6	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	S	SH	Y	DOAP	Viva voce	
	Topic 20: Hemorrhagic disorders	**Number of competencies: (03)**			**Number of competencies that require certification:(NIL)**		
PA20.1	Describe normal hemostasis Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and hemophilia's	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA20.2	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation and diagnosis of Vitamin K deficiency	S	SH	Y	LGT, SGT	Written/ Viva voce	
PA20.3	Define and describe its laboratory findings and diagnosis of Multiple Myeloma	K	KH	Y	LGT, SGT	Written/ Viva voce	
	Topic 21: Blood banking and transfusion	**Number of competencies: (06)**			**Number of competencies that require certification: (1)**		
PA21.1	Classify and describe blood group systems (ABO and RH)	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA21.2	Enumerate blood components and describe their clinical uses	S	SH	Y	LGT, SGT	Written/ Viva voce	
PA21.3	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA21.4	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA21.5	Enumerate the indications and describe the principles and procedure of autologous transfusion	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA21.6	Describe the correct technique to perform blood grouping Describe the correct technique to perform a cross match	S	SH`	Y	DEMO	Viva voce / OSPE	1

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	Topic 22: Clinical Pathology Number of competencies: (05) Number of competencies that require certification: (2)						
PA22.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	S	SH	Y	DOAP	Skill Assessment	
PA22.2	Describe abnormal findings in body fluids in various disease states	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA22.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests.	S	SH	Y	DOAP	Skill Assessment	
PA22.4	Describe and interpret the abnormalities in a panel containing liver function tests	KS	KH	Y	LGT/DOAP	Written/ Viva voce/ Skill Assessment	4
PA22.5	Describe and interpret the abnormalities in a panel containing, renal function tests	KS	KH	Y	LGT/DOAP	Written/ Viva voce/ Skill Assessment	4
	Topic 23: Gastrointestinal tract	**Number of competencies: (09)**			**Number of competencies that require certification: (NIL)**		
PA23.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of carcinoma esophagus	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.3	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine and appendicitis.	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.7	Enumerate causes and describe laboratory diagnosis of malabsorption syndrome	K	KH	N	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA23.8	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA23.9	Describe and identify the microscopic features of peptic ulcer ,intestinal ulcers and tumours of GIT	S	SH	Y	DOAP	Viva voce	
	Topic 24: Hepatobiliary system	**Number of competencies: (09)**			**Number of competencies that require certification: (01)**		
PA24.1	Describe Bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyper Bilirubinemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.3	Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.5	Describe the etiology, pathogenesis and complications of portal hypertension	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests	S	P	Y	DOAP	Skill assessment	1
PA24.7	Define and describe the etiology, types, pathogenesis, morphology and complications of Hepatocellular Carcinoma	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA24.8	Describe the pathophysiology, pathology and complications of acute cholecystitis and Cholelithiasis	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA24.9	Describe and identify the microscopic features of liver diseases and tumors	S	SH	Y	DOAP	Viva voce	
	Topic 25: Respiratory system	**Number of competencies: (07)**			**Number of competencies that require certification: (NIL)**		
PA25.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA25.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA25.3	Define and describe the etiology, types, pathogenesis, stages morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA25.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA25.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	K	KH	Y	LGT, SGT	Written / Viva voce	
PA25.6	Define and describe the etiology, types, exposure, genetic environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung and pleura including mesothelioma	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA25.7	Identify and describe the features of diseases and tumors of lung in a gross and microscopic specimen	S	SH	Y	DOAP	Viva voce	
	Topic 26: Cardiovascular system	**Number of competencies: (10)**			**Number of competencies that require certification: (NIL)**		
PA26.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of atherosclerosis	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA26.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.4	Describe the etiology, pathophysiology, pathology, gross and, complications of Congenital heart disease	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.5	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.6	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease and Interpret abnormalities in cardiac function testing in acute coronary syndromes	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA26.8	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	S	SH	Y	DOAP	Skill Assessment	
PA26.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	LGT, SGT	Written/ Viva voce	
PA26.10	Describe the etiology, pathophysiology, pathology features and complications of tumors of cardiovascular system.	K	KH	N	LGT, SGT	Written/ Viva voce	
	Topic 27 : Urinary Tract	**Number of competencies: (17)**			**Number of competencies that require certification: (NIL)**		
PA27.1	Describe the normal histology of the kidney	K	K	Y	LGT, SGT	Written/ Viva voce	
PA27.2	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA27.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.5	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.8	Enumerate and classify diseases affecting the tubular Interstitium	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA27.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA27.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	K	KH	N	LGT, SGT	Written/ Viva voce	
PA27.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	K	KH	N	LGT, SGT	Written/ Viva voce	
PA27.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	K	KH	N	LGT, SGT	Written/ Viva voce	
PA27.17	Identify and describe the features of kidney diseases and tumors in a gross and microscopic specimen	S	SH`	Y	DEMO	Viva voce / OSPE	
Topic 28: Male Genital Tract		**Number of competencies: (06)**			**Number of competencies that require certification: (NIL)**		
PA28.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA28.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA28.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA28.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA28.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA28.6	Describe and identify the morphologic and microscopic features of diseases and tumors of male genital tract	S	SH	Y	DOAP	Viva voce	
	Topic 29: Female Genital Tract	**Number of competencies: (10)**			**Number of competencies that require certification: (NIL)**		
PA.29.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA29.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA29.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyoma and leiomyosarcomas	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA29.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA29.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA29.6	Describe the etiology and morphologic features of cervicitis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA29.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA29.8	Describe the etiology and morphologic features of adenomyosis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA29.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	K	KH	N	LGT, SGT	Written/ Viva voce	
PA29.10	Describe and identify the morphologic and microscopic features of diseases and tumors of female genital tract	S	SH	Y	DOAP	Viva voce	
	Topic 30: Breast	**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA30.1	Classify and describe the types, etiology, pathogenesis, hormonal dependency of breast pathology and benign disease	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA30.2	Classify and describe the epidemiology, pathogenesis, classification, morphologic and microscopic features, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA30.3	Describe and identify the morphologic and microscopic features of Phyllodes tumor of the breast	S	SH	N	DOAP	Skill Assessment	
PA30.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of Gynaecomastia	K	KH	N	LGT, SGT	Written/ Viva voce	
PA30.5	Describe and identify the morphologic and microscopic features of benign and malignant tumors of the breast	S	SH	Y	DOAP	Viva voce	
	Topic 31: Endocrine system	**Number of competencies: (10)**			**Number of competencies that require certification: (NIL)**		
PA31.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA31.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA31.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	K	KH	Y	LGT, Small group	Written/ Viva voce	
PA31.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features & complications of Thyroid tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA31.5	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	N	LGT, SGT	Written/ Viva voce	
PA31.6	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	K	KH	N	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA31.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	K	KH	N	LGT, SGT	Written/ Viva voce	
PA31.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	LGT, SGT	Written/ Viva voce	
PA31.9	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	K	KH	N	LGT, SGT	Written/ Viva voce	
PA31.10	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	S	SH	Y	DOAP	Viva voce	
	Topic 32: Bone and soft tissue	**Number of competencies: (07)**			**Number of competencies**		
PA32.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA32.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA32.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA32.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	K	KH	N	LGT, SGT	Written/ Viva voce	
PA32.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	K	KH	N	LGT, SGT	Written/ Viva voce	
PA32.6	Classify and describe the etiology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of Osteo arthritis and Gouty arthritis	K	KH	N	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA32.7	Describe and identify the morphologic and microscopic features of diseases and tumors of bone	S	SH	Y	DOAP	Viva voce	
Topic 33: Skin		**Number of competencies: (04)**			**Number of competencies that require certification:(NIL)**		
PA33.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA33.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA33.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	K	KH	N	LGT, SGT	Written/ Viva voce	
PA33.4	Identify, distinguish and describe common tumors of the skin	S	SH	N	DOAP	Skill Assessment	
Topic 34: Central Nervous System		**Number of competencies:(03)**			**Number of competencies that require certification: (01)**		
PA34.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA34.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	K	KH	Y	LGT, SGT	Written/ Viva voce	
PA34.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP	Skill Assessment	1
Topic 35: Eye		**Number of competencies: (01)**			**Number of competencies that require certification: (NIL)**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PA35.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	K	KH	N	LGT, SGT	Written/ Viva voce	

MICROBIOLOGY (CODE: MI)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
MICROBIOLOGY (Topics = 11, Competencies = 74)							
Topic 1: General Microbiology, Ethics & Communication		**Number of competencies: (13)**			**Number of competencies that require certification: (02)**		
MI 1.1	Discuss notable historical events, scientific developments and contributions of key scientists in the evolution of medical microbiology. Discuss the role of microbes in health and disease	K	K	N	LGT	Written assessment, Viva Voce	-
MI 1.2	Describe basic morphology, physiology/characteristics, classification and common infections /diseases caused by bacteria, viruses, fungi and parasites.	K	KH	Y	LGT	Written assessment, Viva Voce	
MI 1.3	Describe the basic principles of molecular biology and the concept and significance of studying molecular genetics. Discuss molecular techniques applied to disease diagnosis in clinical microbiology.	K	KH	Y	LGT	Written assessment, Viva Voce	
MI 1.4	Describe the laboratory methods used to detect causative agents of infectious diseases.	K	KH	Y	LGT	Written assessment, Viva Voce	
MI 1.5	Discuss the appropriate method of collecting and transporting samples to detect microbial agents, including instructions to be given to patients before sample collection.	K	KH	Y	LGT/ SGT	Written assessment, Viva Voce	
MI 1.6	Demonstrate the appropriate method of collection and transport of samples for the detection of microbial agents including instructions to be given to patients before sample collection.	S	SH	Y	DOAP, Role play	Practical exercises /OSPE	3
MI 1.7	Discuss the attitude & behaviors that portray respect & demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases	A	SH	Y	SGT, Role play	Observation, Viva Voce, Scenario based questions	

MI 1.8	Discuss and demonstrate effective communication skills with patients, relatives and clinicians during sample collection and pre/posttest counseling	C	SH	Y	Role play	OSPE, Observation, Scenario based questions	
MI 1.9	Discuss & demonstrate confidentiality pertaining to patient identity in laboratory results	A	SH	Y	SGT, Role play	Scenario based questions, Viva Voce	
MI 1.10	Perform Gram stain, ZN stain, and routine stool examination to identify the different causative agents of infectious diseases from the clinical specimen	S	P	Y	DOAP	Practicals/OSPE	3 for each procedure
MI 1.11	Describe the epidemiological basis of infectious diseases and their application.	K	KH	Y	LGT	Written assessment, Viva Voce	
MI 1.12	Classify and describe the different methods of sterilization and disinfection. Discuss the mechanism of action, application and quality control of different methods in the laboratory and in clinical and surgical practices.	K	KH	Y	LGT SGT	Written assessment, Case discussion exercise, Case based MCQ, Viva Voce	
MI 1.13	Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice.	K	KH	Y	SGT, Case discussion	Written assessment/Viva voce/	
	Topic 2 : Basic Immunology & Immunological disorders	**Number of competencies: (08)**			**Number of competencies that require certification: (NIL)**		
MI 2.1	Explain the role of immunological mechanisms in health and disease (innate and acquired immunity).	K	KH	Y	LGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.2	Describe the structure and functions of immune system and its components (antigens, antibodies and complement systems).	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.3	Describe the host immune responses in Microbial infections (humoral and cellular immune response).	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.4	Explain the immune response in different types of infections (bacterial, mycobacterial, viral, fungal and parasitic infections)	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	

MI 2.5	Discuss the principles and applications of laboratory tests used in diagnostic microbiology based on the host's immune response.	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.6	Discuss the immunological basis of disease prevention through active and passive immune prophylaxis. Discuss the importance of herd immunity in prevention and control of infectious disease in community.	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.7	Describe the immunological mechanisms in immunological disorders (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in their detection.	K	KH	Y	LGT SGT	Written assessment, Case based MCQ, Viva Voce	
MI 2.8	Describe the immunological mechanisms involved in transplantation, tumour immunity and their applications in disease management.	K	KH	N	LGT, SDL`	MCQ, Viva Voce	
Topic 3: CVS and Blood		**Number of competencies: (13)**			**Number of competencies that require certification: (1)**		
MI 3.1	Describe the etiopathogenesis, clinical features, complications/sequelae and laboratory diagnosis of rheumatic fever.	K	KH	Y	LGT SGT, Case-based discussion	Written/ Viva voce	
MI3.2	Describe the classification etio-pathogenesis, clinical features of Infective endocarditis (IE).	K	KH	Y	LGT, SGT, Case based discussion	Written/ Viva voce	
MI 3.3	Discuss the diagnostic modalities of IE available with special emphasis on concept of sepsis and blood culture collection & processing.	K	KH	Y	LGT, SGT , Case based discussion	Written/ Viva voce	2
MI 3.4	Diagnose a clinically suspected case of rheumatic fever/IE based on the findings of various microscopic, serological and culture investigations.	K	KH	Y	LGT, SGT, Case based discussion	Case based exercise, Case based MCQ, Viva voce	
MI 3.5	Define & describe types of Pyrexia of unknown origin (PUO). Discuss the etiopathogenesis and diagnostic modalities available to rule out infective causes of PUO.	K	KH	Y	LGT, SDL, SGT , Case-based discussion	Written assessment/ Viva voce	
MI 3.6	Classify & describe the enteric fever pathogens. Discuss the evolution of the clinical course, pathogenesis, complications, laboratory diagnosis and prevention of enteric fever.	K	KH	Y	LGT. SGT, Case-based discussion	Case based exercise, Written assessment, Case based MCQ, Viva voce	

MI 3.7	Choose the most appropriate laboratory test in a suspected case of enteric fever based on the duration of illness and in a suspected case of carrier.	K	KH	Y	Interpretational exercises (Practicals)	Case based exercise, Case based MCQ, interpretational exercise, Viva Voce	
MI 3.8	Read and interpret the results of various laboratory investigations in a suspected case of enteric fever with special emphasis on serological test results.	K	KH	Y	Interpretational exercises (Practicals)	Case discussion exercise, Case based MCQ, interpretation exercise, Viva Voce	
MI 3.9	Enumerate the common infective causes of anaemia and describe the mechanisms involved in causing anaemia by them.	K	KH	Y	LGT	Written assessment	
MI 3.10	Describe the morphology, life cycle, pathogenesis, laboratory diagnosis, prevention and control of the common parasites causing anaemia.	K	KH	Y	LGT	Written assessment, Case based exercise, Case based MCQ, Viva Voce	
MI 3.11	Describe the morphology, life cycle, pathogenesis, clinical presentation, laboratory diagnosis and prevention of hemoparasites commonly prevalent in India (e.g. causing kala-azar, malaria, filariasis etc.)	K	KH	Y	LGT, SGT, SDL	Written assessment, Case discussion exercise, Case based MCQ, Viva Voce	
MI 3.12	Differentiate agents of malignant malaria from agents of benign malaria reported in peripheral blood smear examination/ serology and explain its clinical significance.	K,	KH	Y	Case-based discussion with reports (Practicals)	Interpretational exercise, Case based exercise, Case based MCQ, Viva Voce	
MI 3.13	Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	LGT, SDL	Written assessment, Case based MCQ, Viva Voce	
Topic 4: Gastrointestinal and Hepatobiliary system		**Number of competencies:(09)**			**Number of competencies that require certification:(01)**		
MI 4.1	Define and differentiate between diarrhea, dysentery and food poisoning. Enumerate the microbial agents causing them.	K	KH	Y	LGT	Written assessment, Case based MCQ, Viva Voce	

MI 4.2	Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of bacterial, viral, parasitic and fungal agents causing diarrhoea.	K	KH	Y	LGT	Written assessment, Case based MCQ, Viva Voce	
MI 4.3	Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of bacterial, viral, parasitic and fungal agents causing dysentery	K	KH	Y	LGT with case discussions	Written assessment, Case based MCQ, Viva Voce	
MI 4.4	Identify the common etiologic agents of diarrhoea and dysentery by stool microscopic examination.	S	SH	Y	DOAP (Practicals)	Interpretational exercises /practical exercise	3
MI 4.5	Enumerate the bacterial, viral, parasitic and fungal agents of food poisoning and discuss their pathogenesis, clinical course and laboratory diagnosis.	K	KH	Y	LGT with case discussion , SGT	Written assessment, Case based MCQ, Viva Voce	
MI 4.6	Describe the infective aetiology, pathogenesis and clinical course of Acid peptic disease (APD) and Discuss the laboratory diagnosis and management of the causative agent of APD.	K	KH	Y	LGT with case discussion, SDL	Written assessment, Case based MCQ, Viva Voce	
MI 4.7	Describe the epidemiology, etiopathogenesis, clinical features and complications of viral hepatitis.	K	KH	Y	LGT with case / clinical report discussion	Written assessment, Case based MCQ, Viva Voce	
MI 4.8	Discuss the modalities in laboratory diagnosis, with special emphasis on viral markers and preventive strategies for viral hepatitis caused by hepatitis viruses.	K	KH	Y	LGT with case / clinical report discussion	Written assessment, Case based MCQ, Viva Voce	
MI 4.9	Suggest the most appropriate laboratory test based on history and clinical presentation in a suspected case of viral hepatitis and interpret the type and progress of viral hepatitis based on the laboratory report of viral markers in a case of infection by hepatitis virus.	K	KH	Y	SDL, SGT with case / clinical report discussion	Written assessment, Case based MCQ, Viva Voce	
	Topic 5: Musculoskeletal system, Skin and Soft tissue infections	**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**		
MI 5.1	Enumerate the microbial agents causing anaerobic infections. Describe the pathogenesis, clinical course and the laboratory diagnosis of anaerobic infections.	K	KH	Y	LGT with case discussion	Written assessment, Case based MCQ, Viva Voce	
MI 5.2	Explain the etiopathogenesis, clinical course & laboratory diagnosis of bone & joint infections caused by bacterial, fungal, viral and parasitic agents.	K	KH	Y	LGT with case discussion	Written assessment, Case based MCQ, Viva Voce	

MI 5.3	Explain the etiopathogenesis, clinical course and the laboratory diagnosis of skin and soft tissue infections caused by bacterial, fungal, viral and parasitic agents.	K	KH	Y	LGT with case discussion SGT	Written assessment, Case based MCQ, Viva Voce	
MI 5.4	Differentiate between infective and non-infective lesions in the skin. Enlist microbes causing systemic disease with involvement of skin.	K	KH	N	LGT	Written assessment, Viva voce	
MI 5.5	Describe the etiopathogenesis, clinical course, complications and laboratory diagnosis of mycobacterial infections involving skin & soft tissue with special emphasis on sample collection from/of skin	K	KH	Y	LGT, SGT, SDL	Written assessment	
Topic 6 : Central Nervous System infections		**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
MI 6.1	Enumerate the microbial agents causing meningitis. Explain the pathogenesis, clinical course and laboratory diagnosis of meningitis caused by bacterial, fungal, viral and parasitic agents.	K	KH	Y	LGT with case discussion SGT	Written assessment, Case based MCQ, Viva Voce	
MI 6.2	Enumerate the microbial agents causing encephalitis Explain the pathogenesis, clinical course and laboratory diagnosis of encephalitis caused by bacterial, fungal, viral and parasitic agents.	K	KH	Y	LGT with case discussion SGT, SDL	Written assessment, Case based MCQ, Viva Voce	
MI 6.3	Identify the microbial agents causing meningitis from a Gram stained given smear. Read & Interpret the microscopic findings and culture report of CSF to diagnose a case of bacterial, viral, fungal or parasitic infection in CNS	K	KH	Y	SGT	Written assessment, Case based MCQ, Viva Voce, OSCE	
Topic 7: Respiratory tract infections		**Number of competencies: (05)**			**Number of competencies/ skills that require certification: (02)**		
MI 7.1	Explain the etiopathogenesis, laboratory diagnosis and prevention of Infections of the upper respiratory tract caused by bacterial, viral, fungal and parasitic agents.	K	KH	Y	LGT with case discussion SGT	Written assessment, Case based MCQ, Viva Voce	
MI 7.2	Explain the etiopathogenesis, laboratory diagnosis and prevention of Infections of the lower respiratory tract caused by bacterial, mycobacterial, viral, fungal and parasitic agents.	K	KH	Y	LGT with case discussion SGT	Written assessment, Case based MCQ, Viva Voce	
MI 7.3	Enlist & identify the etiological agents of lower respiratory infection in specific situations like age, immune status, community-acquired pneumonia, hospital-acquired pneumonia etc	K	KH	Y	LGT with case discussion , SGT	Written assessment, Case based MCQ, Viva Voce	
MI 7.4	Identify the common etiologic agents of upper respiratory tract infections in a Gram Stain/ Albert stained smear of throat swab and correlate with the clinical findings provided.	S	P	Y	DOAP Practicals	OSPE, Clinical case based exercises	3

MI 7.5	Identify the common etiologic agents of lower respiratory tract infections in a provided Gram Stained & Acid fast stained smear of sputum/BAL/tracheal aspirate and correlate with the clinical findings provided	S	P	Y	DOAP Practicals	OSPE, Clinical case based exercises	3
	Topic:8 Genitourinary and Sexually Transmitted Infections	**Number of competencies: (04)**			**Number of competencies that require certification: (NIL)**		
MI 8.1	Describe the etiopathogenesis and discuss the laboratory diagnosis of common bacterial, viral, fungal and parasitic infections of the genito-urinary system	K	KH	Y	LGT/ SGT	Written assessment, Viva voce	-
MI 8.2	Enlist common sexually transmitted infections (STI). Explain the pathogenesis, laboratory diagnosis and prevention of common bacterial and viral sexually transmitted infections.	K	KH	Y	LGT/ SGT	Written assessment, Viva Voce	
MI 8.	Explain the concept and utility of Syndromic management of STI.	K	KH	Y	SDL/ SGT	Written assessment, Viva voce	
MI 8.4	Explain etiopathogenesis, clinical course, and the appropriate method for specimen collection, and discuss the laboratory diagnosis of different clinical and epidemiological types of urinary tract infections.	K	KH	Y	LGT/ SGT	Written assessment, Viva voce	
	Topic 9: Zoonotic diseases and Miscellaneous	**Number of competencies: (06)**			**Number of competencies that require certification: (NIL)**		
MI 9.1	Define and classify Zoonotic infections. Explain etio-pathogenesis, vectors, clinical course, transmission, risk factors, laboratory diagnosis, and preventive & control strategies of different zoonotic infections caused by bacterial, viral, fungal and parasitic agents.	K	KH	Y	LGT/ SGT	Written assessment, Viva voce	
MI 9.2	Describe the etiopathogenesis and laboratory diagnosis of opportunistic infections(OI) along with factors predisposing to the development of OI by bacterial, viral, fungal and parasitic agents.	K	KH	Y	LGT, SGT	Written assessment, Viva voce	
MI 9.3	Choose the most suitable microbiological investigation in a given clinical situation and Interpret the results of the laboratory tests for the diagnosis of the infectious disease	K	SH	Y	Case based exercise, SGT	Cased based exercises, Case based MCQ	
MI 9.4	Describe the etiopathogenesis of infective causes of malignancy and explain the mechanisms used by oncogenic viruses in the development of virus-associated malignancies, along with their preventive measures.	K	KH	Y	LGT SGT	Written assessment, Viva voce	

MI 9.5	Describe the concept of emerging & re-emerging Infectious diseases. Explain the factors responsible for emergence and re-emergence of these disease and strategies for their prevention and control.	K	KH	Y	LGT, small group discussion, SDL	Written assessment, Viva voce	
MI 9.6	Describe the National Health Programs in the prevention of common infectious diseases and discuss the National reference centres for disease diagnosis and control	K	K	N	LGT	Written assessment, Viva voce	
	Topic 10: Healthcare-associated infections (HAI)	**Number of competencies: (05)**			**Number of competencies that require certification: (01)**		
MI 10.1	Enumerate different causative agents and the types of Healthcare-Associated Infections (HAI). Define HAI and describe the chain of transmission and its role in preventing HAI.	K	K	Y	LGTs, SGT	Written assessment, Viva voce	
MI 10.2	Describe the standard & transmission based precautions for infection control and the role of the hospital infection control committee (HICC) in the prevention of HAI.	K	KH	Y	LGTs, SGT	MCQ, viva voce	
MI 10.3	Demonstrate hand washing, donning- doffing of PPE and segregation of Biomedical waste	S	SH	Y	DOAP, Role-play, SGT, Practicals	OSPE, Direct Observation with checklist	3 each
MI 10.4	Describe the methods used and significance of assessing the microbial contamination of food, water and air (in hospital surveillance)	K	KH	N	Interactive LGTs	Written assessment, MCQ, Viva Voce	
MI 10.5	Describe the commonly detected drug-resistant microbes in HAI. Explain the mechanism of evolution, spread, and control of antimicrobial drug resistance in hospitalized patients.	K	KH	Y	LGT, SGT	Written assessment, MCQ, Viva Voce	
	Topic 11: Antimicrobial resistance (AMR) & Antimicrobial Stewardship (AMSP)	**Number of competencies: (03)**			**Number of competencies that require certification: (Nil)**		
MI 11.1	Describe the genotypic & phenotypic mechanisms of antimicrobial drug resistance and the methods of antimicrobial susceptibility testing, along with interpretation of the antimicrobial susceptibility testing report	K	KH	Y	LGT, SGT	Written assessment, MCQ, Viva Voce, Interpretational exercise	-
MI 11.2	Explain intrinsic & acquired drug resistance along with the antimicrobial spectrum of important human pathogens and its application in clinical therapy.	K	KH	Y	LGT, SGT	Written assessment, MCQ, Viva Voce	-
MI 11.3	Explain the concept and application of the antimicrobial stewardship program including rational antimicrobial prescription and your role in its implementation.	K	KH	Y	LGT, SGT	Written assessment, MCQ, Viva Voce	-

FORENSIC MEDICINE & TOXICOLOGY (CODE: FM)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FORENSIC MEDICINE & TOXICOLOGY (Topics = 14, Competencies = 158)							
Topic 1: Introduction to forensic medicine basics of legal procedure.		**Number of competencies: (09)**			**Number of competencies that require certification: (NIL)**		
FM1.1	Define Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM1.2	Describe history of Forensic Medicine	K	KH	N	SDL	Written/ Viva voce	
FM1.3	Describe legal competencies including Bharatiya Nagarika Suraksha Sanhita (BNSS), Bharatiya Nyay Sanhita (BNS) Bharatiya Sakshya Adhiniyam (BSA), Protection of Children from Sexual Offences Act (POCSO) Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM1.4	Describe Courts in India and their powers: Supreme Court, High Court, Sessions court, Magistrate's Court, Labour Court, Family Court, Executive Magistrate Court and Juvenile Justice Board	K	KH	N	SDL/Moot Court	Written/ Viva voce	
FM1.5	Describe Court competencies including issue of Summons, conduct money, types of witnesses, recording of evidence oath, affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence & conduct of doctor in witness box	K	KH	Y	LGT, SGT/ Practicals / Seminars, Moot Court	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FM1.6	Describe Offenses in Court including Perjury; Court strictures vis-a-vis Medical Officer	K	KH	N	SDL	Written/ Viva voce	
FM1.7	Describe Dying Declaration & Dying Deposition	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM1.8	Describe the latest decisions/notifications/resolutions/ circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc.	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM1.9	Describe the importance of documentation in medical practice in regard to medico legal examinations, Medical Certificates and medico legal reports especially - maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres. - maintenance of medico-legal register like accident register. - documents of issuance of wound certificate - documents of issuance of drunkenness certificate. - documents of issuance of sickness and fitness certificate. - documents for issuance of death certificate. -documents of Medical Certification of Cause of Death - Form Number4 and 4A - documents for estimation of age by physical, dental and radiological examination and issuance of certificate	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce/Direct observation	
Topic 2: Forensic Pathology		**Number of competencies: (28)**			**Number of competencies that require certification : (1)**		
FM2.1	Select appropriate cause of death in a particular scenario by referring ICD 11 code	K	KH	Y	LGT,SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.2	Write a correct Medical Certificate of Cause of Death (MCCD) certificate as per ICD 11 document	S	SH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce/ Direct observation /OSPE	3

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FM2.3	Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.4	Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation	K	KH	Y	LGT, SGT/ Practicals / Seminars/video demo.	Written/ Viva voce	
FM2.5	Describe and discuss issues related to sudden natural deaths	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.6	Describe and discuss natural and unnatural deaths	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.7	Discuss moment of death, modes of death – coma, asphyxia and syncope	K	KH	Y	LGT, SGT/ Practicals / Seminars/ Video demo.	Written/ Viva voce	
FM2.8	Describe and discuss suspended animation	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.9	Describe and discuss post-mortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP/Video Demo.	Written/Viva voce/OSPE	
FM2.10	Describe putrefaction, mummification, adipocere and maceration	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/Viva voce/OSPE	
FM2.11	Discuss estimation of time since death	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
FM2:12	Introduction to mortuary setup and minimum requirement for conducting post-mortem examination and Embalming techniques	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.13	Describe and discuss autopsy competencies including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/Viva voce/OSPE	
FM2.14	Describe the legal requirements to conduct post-mortem examination and competencies to conduct medico-legal post-	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/Viva voce/OSPE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	mortem examination						
FM2.15	Describe and discuss obscure autopsy and Virtopsy	K	KH	Y	LGT, SGT/ Practicals / Seminars, Video Demo.	Written/ Viva voce	
FM2.16	Describe and discuss examination of clothing, preservation of viscera on post-mortem examination for chemical analysis and other medico-legal purposes, post-mortem artefacts	K	KH	Y	LGT, SGT/ Practicals / Seminars , Autopsy, DOAP, Video Demo.	Written/ Viva voce/OSPE	
FM2.17	Describe the clinical features, post-mortem finding and medico legal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia, heat stroke, sun stroke, heat exhaustion/prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot)	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy ,DOAP	Written/ Viva voce	
FM2.18	Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
FM2.19	Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM 2.20	Describe special protocols for conduction of medico-legal autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
FM2.21	Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones	K	KH	Y	LGT, SGT/ Practicals / Seminars, DOAP	Written/ Viva voce/OSPE	
FM2.22	Describe and discuss exhumation	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM2.23	Crime Scene Investigation: Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation	K	KH	N	SDL	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FM2.24	Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences	K	KH	N	SDL	Written/ Viva voce	
FM2.25	Demonstrate professionalism while conducting autopsy in medico legal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A, C	KH/SH	Y	LGT, SGT/ Practicals / Seminars, DOAP	Written/ Viva voce/ OSPE	
FM2.26	Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged negligence medical dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation	A	KH	Y	LGT, SGT/ Practicals / Seminars, DOAP	Written/ Viva voce/ OSPE	
FM2.27	Demonstrate ability to exchange information by verbal, or nonverbal communication to the peers, family members, law enforcing agency and judiciary	A and C	KH	Y	LGT, SGT/ Practicals / Seminars, DOAP	Written/ Viva voce	
FM2.28	Demonstrate ability to use local resources whenever required like in mass disaster situations	A and C	KH	Y	LGT, SGT/ Practicals /Seminars	Written/ Viva voce	
	Topic 3: Mechanical asphyxia	**Number of competencies: (04)**			**Number of competencies that require certification : (NIL)**		
FM3.1	Define, classify and describe asphyxia and medico-legal interpretation of post-mortem findings in asphyxial deaths	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
FM3.2	Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation and dispatch of ligature material	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy DOAP	Written/ Viva voce/OSPE	
FM3.3	Describe and discuss patho-physiology, clinical features, post-mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FM3.4	Describe and discuss types, patho-physiology, clinical features, postmortem findings and medico-legal aspects of drowning	K	KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
	Topic 4: Clinical forensic medicine – identification	**Number of competencies: (05)**			**Number of competencies that require certification : (NIL)**		
FM4.1	Define and describe Corpus Delicti, establishment of identity of living persons including race, sex, religion, complexion, stature.	K	KH	Y	LGT, SGT/ Practicals / Seminars , Bedside clinic, DOAP	Written/Viva voce/ skill assessment	
FM4.2	Discuss teeth-eruption, decay, bite marks, and medico-legal aspects of teeth.	K	KH	Y	LGT, SGT/ Practicals / Seminars , Bedside clinic, DOAP	Written/Viva voce/ skill assessment	
FM4.3	Discuss age determination using morphology, bones- ossification centers and medico-legal aspects of age.	K	KH	Y	LGT, SGT/ Practicals / Seminars , Bedside clinic, DOAP	Written/Viva voce/ skill assessment	
FM 4.4	Describe and discuss identification of criminals, unknown persons, dead bodies from the remains-hairs, fibers, teeth, anthropometry	K	KH	Y	LGT, SGT/ Practicals / Seminars , Bedside clinic, DOAP	Written/Viva voce/ skill assessment	
FM4.5	Dactylography, footprints, scars, tattoos, poroscopy and superimposition	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
	Topic 5: Clinical forensic medicine - mechanical injuries and wounds	**Number of competencies: (06)**			**Number of competencies that require certification : (NIL)**		
FM5.1	Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self- inflicted/fabricated wounds and their medico-legal aspects	K	KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP	Written/ Viva voce/OSCE	
FM5.2	Define injury, assault & hurt. Describe Bharatiya Nyay Sanhita (BNS) pertaining to injuries	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

FM5.3	Describe accidental, suicidal and homicidal injuries. Describe simple, grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM5.4	Describe healing of injury and fracture of bones with its medico-legal importance	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
FM5.5	Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM5.6	Describe and discuss different types of weapons including dangerous weapons and their examination	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
Topic 6: Clinical forensic medicine - firearm injuries		**Number of competencies: (02)**			**Number of competencies that require certification : (NIL)**		
FM6.1	Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM6.2	Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP	Written/Viva voce/OSCE	
Topic 7: Clinical forensic medicine - regional injuries		**Number of competencies: (02)**			**Number of competencies that require certification : (NIL)**		
FM7.1	Describeanddiscuss regional injuries to head(Scalpwounds, fracture skull, intracranial hemorrhages, coup and countercoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and Skeleton	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic or autopsy, DOAP	Written/ Viva voce/ OSCE/OSPE	

FM7.2	Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic or autopsy, DOAP	Written/ Viva voce/ OSCE/OSPE	
Topic 8: Clinical forensic medicine - sexual offences		**Number of competencies: (16)**			**Number of competencies that require certification : (NIL)**		

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
FM8.1	Describe various sections of BNS and BNSS related to definition of rape, medical examination of rape victim/ survivor and accused of rape, police information by the doctors and medical care with recent amendments notified till date (i.e. Sections 63 BNS, 200 BNS, 397 BNSS & 184 BNSS, 52 BNSS), and recent amendments notified till date, sections 3 to 12, 27 and 41 of Protection of Children from sexual offences (POCSO) Act.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Video Demo.	Written/ Viva voce/ OSCE/OSPE	
FM8.2	Describe and discuss the examination of the survivor of an alleged case of rape, and the preparation of report, framing the opinion and preservation and dispatch of trace evidences in such cases	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP, Video Demo.	Written/ Viva voce/OSCE	
FM8.3	Describe and discuss informed consent in sexual intercourse. Describe and discuss histories of gender and sexuality-based (sexual orientation) identities and rights in India. Describe history of decriminalization of 'adultery' and consensual adult homosexual sexual behaviour. Describe sexual offences with its medicolegal significance- ➢ Forced/ non-consensual penetrative anal sex ➢ Forced/ non-consensual oral sex ➢ Sexual acts with animals/ bestiality/ zoophilia ➢ Forced/ non-consensual insertion of fingers or objects Forced/ non-consensual touching or groping or disrobing ('indecent assault').	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

FM 8.4	Define and discuss infanticide, foeticide and stillbirth	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.5	Define and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP of ossification centres, Hydrostatic test, Sudden infant death syndrome and Munchausen's syndrome by proxy.	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.6	Describe the difference between paraphilia and paraphilic disorder. Describe paraphilic disorder as per the latest guidelines of DSM and ICD and describe medico-legal implications of paraphilic disorder by referring scientific literature and legal justification (if any). Describe and discuss various paraphilias in the context of informed consent during any sexual interaction.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.7	Describe legitimacy and its medico legal importance. Describe and discuss how 'signs' of virginity (so called 'virginity test', including finger tests (on female genitalia) are unscientific, inhuman and discriminatory. Describe and discuss how to appraise the courts about unscientific basis of these tests if court orders it.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.8	Discuss the medico legal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour, superfoetation, superfecundation and signs of recent and remote delivery in living and dead	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
FM8.9	Discuss disputed paternity and maternity	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.10	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC&PNDT) - Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005 with Amendments	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.11	Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

FM8.12	Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM8.13	Discuss the relative importance of surgical methods of contraception(vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme	K	K/KH	N	SDL	Written	
FM 8.14	Discuss Assisted Reproductive Technology Regulation Act 2021 and Surrogacy Act 2021 for accreditation, supervision and regulation of ART and Surrogacy Clinics in India.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written	
FM8.15	Define, classify and discuss abortion, methods of MTP and criminal abortion and complication of abortion. MTP Act 2021 and recent amendments.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written	
FM8.16	Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
Topic 9: Clinical forensic medicine - child abuse and torture and human rights Number of competencies: (04) Number of competencies that require certification : (NIL)							

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
FM9.1	Describe and discuss child abuse and battered baby syndrome	K	K/KH	Y	LGT, SGT/ Practicals/ Seminars	Written/ Viva voce	
FM9.2	Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequalae, management of torture Survivors	K	K/KH	N	SDL	Written/ Viva voce	
FM9.3	Describe and discuss guidelines and Protocols of National Human Rights Commission regarding torture	K	K/KH	N	SDL	Written/ Viva voce	
FM9.4	Should be able to demonstrate the professionalism while dealing with survivor of torture and human right violations, sexual assaults- psychological consultation, rehabilitation	A, C	K/KH/SH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

Topic 10: Medical jurisprudence (medical law and ethics)		Number of competencies: (29)			Number of competencies that require certification : (NIL)		
FM10.1	Describe Medical Ethics and explain its historical emergence	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.2	Describe the Indian Medical Register	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.3	Describe the functions and role of National Medical Commission and State Medical Councils	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.4	Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.5	Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary competencies, warning notice and penal erasure	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.6	Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.7	Describe and discuss ethics related to HIV patients and legal aspects as per The Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (Prevention and Control) Act, 2017.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.8	Describe the Consumer Protection Act-2019 (Medical Indemnity Insurance, Civil Litigations and Compensations)	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.9	Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors	K	KH	N	SDL	Written/ Viva voce	
FM10.10	Describe communication between doctors, public and media	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.11	Describe and discuss euthanasia and Do not Resuscitate (DNR)	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	N	SDL	Written/ Viva voce	

FM10.13	Describe social aspects of Medico-legal cases with respect to survivors of assault, rape, attempted suicide, homicide, domestic violence, dowry- related cases	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.14	Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behavior, communication skills, conflict resolution Techniques	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.15	Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.16	Describe and discuss Bioethics	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.17	Describe and discuss ethical Principles: Respect for autonomy, non-malfeasance, beneficence & justice	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.18	Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitor, prevention of medical negligence and defenses in medical negligence litigations	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.19	Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.20	Describe therapeutic privilege, Malingering, therapeutic Misadventure, Professional Secrecy, Human Experimentation	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.21	Describe Products liability and Medical Indemnity Insurance	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

FM10.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.24	Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor- patient relationship: professional secrecy and privileged communication	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.25	Clinical research & Ethics Discuss human experimentation including clinical trials	K	KH	N	SDL	Written/ Viva voce	
FM10.26	Discuss the constitution and functions of ethical committees	K	KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	K	KH	N	SDL	Written/ Viva voce	
FM10.28	Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by National Medical Commission and rules and regulations prescribed by it from time to time	A and C	SH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM10.29	Demonstrate ability to conduct research in pursuance to guidelines or research ethics	A and C	KH/SH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
Topic 11: Forensic psychiatry		**Number of competencies: (06)**			**Number of competencies that require certification : (NIL)**		

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
FM11.1	Classify common mental illnesses including post-traumatic stress disorder (PTSD)	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM11.2	Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM11.3	Describe Civil and criminal responsibilities of a mentally ill person	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM11.4	Differentiate between true mental illness from feigned mental illness	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	

FM11.5	Describe & discuss Delirium tremors	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM11.6	Describe the Indian Mental Health Act, 2017 and recent amendments with special reference to admission, care and discharge of a mentally ill person	K	K/KH	N	SDL	Written/ Viva voce	
Topic 12: Forensic laboratory investigation, recent advances and trace evidences		**Number of competencies: (06)**			**Number of competencies that require certification : (NIL)**		
FM12.1	Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM12.2	Describe the methods of sample collection, preservation, labelling, dispatch, and interpretation of reports	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM12.3	Cyber Forensic in relation to Privacy of Medical Documents	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM12.4	Demonstrate professionalism while sending the biological or trace evidences to Forensic Science laboratory, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings	A and C	KH/SH	Y	LGT, SGT/ Practicals / Seminars, DOAPs	Viva voce / OSPE	
FM12.5	Demonstrate the professionalism while preparing reports in medico legal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A and C	SH	Y	LGT, SGT/ Practicals / Seminars	OSPE/Viva voce	

FM12.6	Enumerate the indications and describe the principles and appropriate use for: - DNA profiling - -Facial reconstruction - Polygraph (Lie Detector) - Narcoanalysis, - Brain Mapping, Digital autopsy, - Virtual Autopsy, Imaging technologies	K	K/KH	N	SDL	Written/ Viva voce	
	Topic 13: Toxicology	**Number of competencies: (21)**			**Number of competencies that require certification : (NIL)**		
FM13.1	Describe the history of Toxicology	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM13.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM13.3	Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/viva voce	
FM13.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM13.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy, DOAP	Written/ Viva voce/OSPE	
FM13.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP	Written/ Viva voce/OSCE	
FM13.7	Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP	Written/ Viva voce/OSCE	
FM13.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, DOAP	Written/ Viva voce/OSCE	

FM13.9	Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and dispatch of relevant samples for laboratory analysis.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM13.10	Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy	K	K/KH	Y	LGT, SGT/ Practicals / Seminars	Written/ Viva voce	
FM13.11	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic- Carbolic Acid (phenol), Oxalic and acetylsalicylic acids	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.12	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.13	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron.	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.14	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to Ethanol, methanol, ethylene glycol Local Made Liquor and Hooch Tragedy	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.15	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	

FM13.16	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.17	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepines, phenytoin, lithium, haloperidol, neuroleptics, tricyclics	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	

FM13.18	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, competencies of enhanced elimination with regard to: iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v.Cardiovascular Toxicology Cardio toxic plants – oleander, Cerbera odollam, aconite, digitalis vi. Gastro- Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Bed side clinic, Autopsy, DOAP	Written/ Viva voce/OSCE	
FM13.19	Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy	Written/ Viva voce	
FM13.20	Describe features and management of abuse/poisoning of Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent, Mushroom Poisoning, Food Poisoning	K	K/KH	Y	LGT, SGT/ Practicals / Seminars, Autopsy	Written/ Viva voce	
FM13.21	Describe toxic pollution of environment, its medico-legal aspects &toxic hazards of occupation and industry	K	K/KH	N	SDL	Written/ Viva voce	

Topic 14: Skills in forensic medicine & toxicology		Number of competencies: (20)			Number of competencies that require certification: (5)		
FM14.1	Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment	S	SH/P	Y	Bedside clinic (ward/ casualty), SGT/ Practicals / Seminars	Log book/ Skill station/Viva voce / OSCE	3
FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment	S	SH	Y	Bedside clinic (ward/casualty), SGT/ Practicals / Seminars	Log book/ Skill station/Viva voce / OSCE	
FM14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination	S	SH	Y	Bedside clinic, SGT/ Practicals / Seminars, DOAP	Skill lab/ Viva voce	
FM14.4	Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environments	S	KH	Y	SGT/ Practicals / Seminars, Demonstration	Log book/ Skill station/Viva voce / OSCE	
FM14.5	Examine and prepare Medical Certificate Of Cause Of Death (MCCD)in a simulated/ supervised environment	S	SH/P	Y	Bedside clinic (ward/ casualty), SGT/ Practicals / Seminars	Log book/ Skill station/Viva voce / OSCE	3
FM14.6	Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment	S	KH	Y	SGT/ Practicals / Seminars, Autopsy, DOAP	Log book/ Skill station/Viva voce / OSCE	3
FM14.7	Demonstrate the correct technique to perform and identify ABO &RH blood group of a person	S	SH	Y	SGT/ Practicals / Seminars, DOAP	Log book/Skill station/Viva voce	
FM14.8	Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment	S	SH	Y	SGT/ Practicals / Seminars, DOAP	Log book/Skill station/Viva voce	
FM14.9	Demonstrate ability to identify & prepare medico legal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/Skill station/Viva voce/ OSPE	

FM14.10	To identify & describe weapons of medico legal importance which are commonly used e.g. lathi, knife, kripan, axe, gandasa, gupti, farsha, dagger, bhalla, razor & stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries)	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/Skill station/Viva voce/ OSPE	
FM14.11	Describe the contents and structure of bullet and cartridges used &to provide medico- legal interpretation from these	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/ Skill	
FM14.12	To estimate the age of foetus by post-mortem examination	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Theory/ Clinical assessment/ Viva voce	
FM14.13	To examine & prepare report of an alleged accused person in cases of various sexual offences in a simulated/ supervised	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/ Skill station/Viva voce /	3
	environment. Demonstrate an understanding of framing the opinion, preservation and dispatch of trace evidencxes in such cases. Describe and discuss personal opinions and their impact on such examinations and the need for objectivity/ neutrality to avoid prejudice influencing the case.					OSCE	
FM14.14	To examine & prepare medico-legal report on an alleged victim/ survivor of various sexual offences in a simulated/ supervised environment. (Guidelines and protocols of Medico Legal Care for Survivors/ Victims of sexual violence; Ministry of Health and Family Welfare, GOI- with latest modifications if any). Demonstrate an understanding of framing the opinion, preservation and dispatch of trace evidences in such cases. Describe and discuss sympathetic/ empathetic examination and interview of victims/ survivors of sexual assault, including presence of trusted adult figure (person) in cases of minor victims/ survivors.	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/ Skill station/Viva voce / OSCE	3
FM14.15	To examine & prepare medico-legal report of drunk person in a simulated/ supervised environment	S	KH	Y	SGT/ Practicals / Seminars, Bed side clinic, DOAP	Log book/ Skill station/Viva voce / OSCE	

FM14.16	To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/ Viva voce	
FM14.17	To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination	S	KH	Y	SGT/ Practicals / Seminars, DOAP	Log book/ Skill station/Viva voce / OSCE	
FM14.18	To record and certify dying declaration in a simulated/ supervised environment	S	KH	Y	SGT/ Practicals / Seminars, Role Play, Bed side clinic DOAP	Log book/ Skill station/Viva voce /OSCE	
FM14.19	To collect, preserve, seal and dispatch exhibits for DNA-Fingerprinting using various formats of different laboratories.	S	KH	Y	LGT , SGT/ Practicals / Seminars,	Log book/ Skill station/Viva voce	
FM14.20	To give expert medical/ medico-legal evidence in Court of law	S	KH	Y	LGT, SGT/ Practicals / Seminars, DOAP, role play, Court Visits	Log book/ Viva voce/OSCE	

LIST OF CONTRIBUTORS

Anatomy

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NATIONAL MEDICAL COMMISSION

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



Volume II-2024

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

2024

National Medical Commission
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FOREWORD

The National Medical Commission (NMC) was created on 24th September, 2020 by the Act of Parliament replacing the erstwhile Medical Council of India and Board of Governors. The foundation for making of an Indian Medical Graduate ('Doctor') depends on building a sound base of medical education. In the year 2019, a committed team appointed by erstwhile MCI revolutionized the age-old didactic teaching system in Indian medical colleges by bringing in Competency Based Medical Education (CBME). This unique approach has raised the level of medical education with respect to quality, versatility and horizontal- vertical alignment of all subjects. The mandate of NMC to see that the first line of health care leaders who reach out to the common masses empathizing with the problems of the rural populace are being met with. The two-pronged approach of increasing the quantity and improving the quality of medical education is being tackled with this approach.

Education has now become student-centric and patient-centric instead of pedagogic system. The first batch of students have now completed their training under CBME implemented in 2019. It was a demand from actively involved academia to revisit the curriculum and modify it so as to keep abreast at international level. Interim years of covid pandemic also were 'a good teaching academy' for all. Increasing influence of artificial intelligence on student community, matched with rising cost of medical education and competitiveness, instead of accommodative, helping and balanced approach, has led to increasing risk of losing social intelligence and humane approach amidst the emerging doctors. The risk of creating overqualified clerks looms large on our medical system.

A national team of experienced as well as emerging empathetic and talented teachers engaged as full-time faculty in various medical institutions were invited by the Undergraduate Education Board (UGMEB) of the NMC to invest their extra energy and hours to assess the curricula, examinations, AETCOM, vertical and horizontal integration of various subjects and bring in modifications. Each subject had committee of five persons on an average, from different parts of the country. Totally 93 experts have given their valuable time and energy in framing this new curriculum and all three volumes, prepared by their predecessors in 2019. The hard work done by them was the base on which this edifice has further been refined.

We are sure that fraternity and students are going to have an educational journey that will be full of fun, knowledge and experience sharing. UGMEB of the NMC acknowledges each and every one involved in the process, named and unsung heroes who have been the part of this exercise of bringing the document to the readers.

Dr. Aruna V. Vanikar, President,
Dr. Vijayendra Kumar, Member,
UGMEB, NMC

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How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created bysubject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. The manual must be used withreference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the Roles (global competencies) extracted from the Competency Based Medical Education (CBME) Guidelines, 2024. The global competencies identified asdefining the roles of the Indian Medical Graduate are the broad competencies that the learner must aspire to achieve, teachers and curriculum plannersmust ensure that the learning experiences are aligned to this Manual.

Extract from the Competency Based Medical Education (CBME) Guidelines, 2024

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby advocated. The first contact physician needs to be skillful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

2.1 National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

a. Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.

b. Learn key aspects of National policies on health and devote himself to its practical implementation.

c. Achieve competence in the practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

d. Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

e. Become an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2 Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

a. Be competent for working in the health care team from Phase I MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

b. Be competent to practice preventive, promotive, curative, palliative and rehabilitative· medicine in respect to the commonly encountered health problems.

c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential medicines" and their common adverse effects.

d. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

e. Possess the attitude for continued self-learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

f. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

i. Family Welfare and Maternal and Child Health (MCH);

ii. Sanitation and water supply;

iii. Prevention and control of communicable and non-communicable diseases;

iv. Immunization;

v. Health Education and advocacy;

vi. Indian Public Health Standards (IPHS) at various level of service delivery;

vii. Bio-medical waste disposal;

viii. Organizational and or institutional arrangements.

g. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counselling.

h. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures with maximum community participation.

i. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

j. Be competent to work in a variety of health care settings.

k. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility, dependability, and ability torelate to or

l. show concern for other individuals.

All efforts must be made to equip the medical graduates to acquire certifiable skills as given in comprehensivelist of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS)Indian Medical Graduate, as given in theGraduate Medical Education Regulations.

2.3 Goals for the Learner

In order to fulfil these goals, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

a. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

b. Leader and member of the health care team and system with capabilities to collect, analyse, synthesize and communicate health data appropriately.

c. Communicate with patients, families, colleagues, community and community in a methodological and skillful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

d. Lifelong learner committed to continuous improvement of skills and knowledge.

e. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, profession, and society. Training of humanities and social sciences will be useful for this training.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education. curriculum that focuses on the desired and observable activity in real life situations. In order to effectively fulfill the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1 Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.2 Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.

3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5 Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6 Demonstrate ability to elicit and record from the patient, and other relevant sources. including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.

3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

a. Disease prevention,

b. Health promotion and cure,

c. Pain and distress alleviation, and

d. Rehabilitation and palliation.

3.1.13 Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,

3.1.14 Demonstrate ability to appropriately identify and refer patients who may require· specialized or advanced tertiary care.

3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3.2 Leader and member of the health care team and system

3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4 Access and utilize components of the health care system and health delivery in a_ manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyse and utilize health data.

3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6 Recognize and advocate health. promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3 Communicator with patients, families, colleagues and community

3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a

language that patients, families, colleagues and community understands and in a manner that will improve patient patients, families, colleagues and community satisfaction and health care outcomes.

3.3.2 Demonstrate ability to establish professional relationships with patients, families, colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

3.3.3 Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision- making and overcoming hesitancy towards health initiatives.

3.4 Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1 Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2 Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3 Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4 Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.

3.4.5 Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5 Professional who is committed to excellence, is ethical, responsive and accountable to patients, the profession and community.

3.5.1 Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2 Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3 Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4 Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5 Demonstrate commitment to the growth of the medical profession as a whole.

Section 2

Subject-wise competencies

Section 2 contains subject-wise competencies that must be achieved at the end of instruction in that subject. These are organised intables.

Competencies (Outcomes) in each subject are grouped according to topics number-wise. It is important to review the individual competencies inthe light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified.The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’indicates independent performance without supervision and is required rarely in the pre-internship period. The competency is a core (Y - must achieve) or anon-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under thesection “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s logbook is also given.

The number of topics and competencies in each subject are given below:

Topics and competencies in Phase 1 & Phase 2 subjects (Volume I)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Anatomy	82	413
2.	Physiology	12	136
3.	Biochemistry	14	84
4.	Pharmacology	10	92
5.	Pathology	35	182
6.	Microbiology	11	74
7.	Forensic Medicine	14	158
	Total	**178**	**1139**

Topics and competencies in Medicine and Allied subjects (Volume II)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Community Medicine	20	136
2.	General Medicine	29	525
3.	Paediatrics	35	406
4.	Psychiatry	13	17
5.	Dermatology, Venereology & Leprosy	15	48
	Total	112	1132

Topics and competencies in Surgery and Allied subjects (Volume III)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	General Surgery	30	133
2.	Ophthalmology	10	60
3.	Otorhinolaryngology	04	63
4.	Obstetrics & Gynaecology	38	141
5.	Orthopaedics	14	40
6.	Anesthesiology	11	52
7.	Radiodiagnosis & Toxicology	07	21
	Total	**114**	**510**

Deriving learning objectives from competencies

K	Knows	A knowledge attribute – Usually enumerates or describes
KH	Knows how	A higher level of knowledge – is able to discuss or analyse
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify the etiology of meningitis based on given CSF parameters**	**K/S**	**SH**	**Y**

LO 1	At the end of the session the **phase II student** must be able to enumerate the most common causes of meningitis correctly
LO 2	At the end of the session the **phase II student** must be able to enumerate the components of CSF analysis correctly
LO 3	At the end of the session the **phase II student** must be able to **describe** the CSF features for a given etiology of meningitis **accurately**
LO 4	At the end of the session the **phase II student** must be able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

Learning Objective (LO): Statement of what a learner should be able to do at the end of a specific learning experience

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

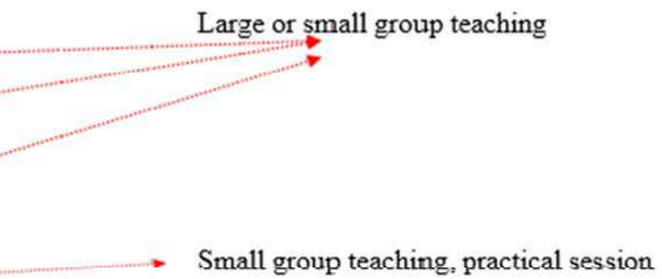
Deriving learning methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the **Phase II student** must be able to enumerate the most common causes of meningitis **correctly**
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given etiologic of meningitis **accurately**
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**



*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

Deriving assessment methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the Phase II student must be able to enumerate the most common causes of meningitis correctly	Written/SAQ: Enumerate 5 causes of meningitis based on their prevalence in India
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given aetiology of meningitis **accurately**	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**	Short note / part of the structured essay/ Direct observation/OSPE/ Viva voce Review the CSF findings in the following patient and identify (write or vocalize) the most likely etiology

*** Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document**

Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

   In other words: Where do you want to go? Or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and

   Reflection in daily practice for the benefit of the individualand community being served.

   In other words: What should you have? Or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of as pecific learning experience. In other words:

   What the Indian Medical Graduate should know, do, or behave.

Action Verbs used in this manual

Knowledge	**Skill**	**Attitude/communicate**
Enumerate	Identify	Counsel
List	Demonstrate	Inform
Describe	Perform under supervision	Demonstrate understanding of
Discuss	Perform independently	Communicate
Differentiate	Document	
Define	Present	
Classify	Record	
Choose	Elicit	
Interpret		
Report		

Note:

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the first/ second phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed undersupervision will be indicated in the last column.

Explanation of terms used in this manual

LGT (LGT)	Any instructional large group method including interactive lecture
SGT (SGT)	Any instructional method involving small groups of students in an appropriate learning context
DOAP (Demonstration-Observation-Assistance-Performance)	A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently
Skill assessment/ Direct observation	A session that assesses the skill of the student including those in the practical laboratory, skills- lab,skills- station that uses mannequins /papercase/ simulated patients/ real patients as the context demands
DOPS (Directly observed procedural skills)	DOPS is a method of assessment for assessing competency of the students in which the examiner directly observes the student performing procedure
Core	A competency that is necessary in order to complete the requirements of the subject (traditional - must know)
Non-Core	A competency that is optional in order to complete the requirements of the subject (traditional- nice (good) to know/ desirable to know)
National Guidelines	Health programs as relevant to the competency that are part of the National Health Program

Domains of learning

K	Knowledge
S	Skill
A	Attitude
C	Communication

Levels of competency

K	Knows	Aknowledge attribute-Usually enumerates or describes
KH	Knows how	A higher level of knowledge-isabletodiscussoranalyze
SH	Shows how	A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified numberof times - certification or capacity to perform independently results

Note:

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how- an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

Volume II
Competency based Undergraduate Curriculum
in
Medicine & Allied subjects

COMMUNITY MEDICINE (CODE: CM)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
COMMUNITY MEDICINE (Topics:20 Competencies: 136)							
	Topic 1: Concept of Health and Disease Number of competencies:(10) Number of competencies that require certification :(NIL)						
CM1.1	Define and describe the concept of Public Health	K	KH	Y	LGT, SGT	Written/Viva-voce	
CM1.2	Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	K	KH	Y	LGT, SGT	Written/Viva-voce	
CM1.3	Describe the characteristics of agent, host and environmental factors in health and disease and the multifactorial etiology of disease	K	KH	Y	LGT, SGT	Written/Viva-voce	
CM1.4	Describe and discuss the natural history of disease	K	KH	Y	LGT, SGT	Written/Vova voce	
CM1.5	Describe the application of interventions at various levels of prevention	K	KH	Y	LGT, SGT	Written/Vova voce	
CM1.6	Describe and discuss the concepts, the principles of Health promotion and Education, IEC and Behavioral change communication (BCC)	K	KH	Y	LGT, SGT	Written/viva-voce	
CM1.7	Enumerate and describe health indicators	K	KH	Y	LGT, SGT	Written/Vova voce	
CM1.8	Describe the Demographic profile of India and discuss its Impact on health	K	KH	Y	LGT, SGT	Written/Vova voce	
CM1.9	Demonstrate the role of effective Communication skills in health in a simulated environment	S	SH	Y	DOAP, FAP Clinical posting	Skill assessment /OSCE	
CM1.10	Demonstrate the Important aspects of the doctor patient relationship in a simulated environment	S	SH	Y	DOAP, FAP Clinical posting	Skill assessment /OSCE	
	Topic 2: Relationship of social and behavioural to health and diseaseNumber of competencies:(5) Number of competencies that require certification:(2)						
CM2.1	Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community	S	SH	Y	LGT,SGT, DOAP FAP Clinical posting	Written/Vova voce/ Skill assessment	5

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM2.2	Describe the socio-cultural factors, family (types), its role in health anddisease&demonstrateinasimulatedenvironmentthecorrect assessment of socio-economic status	S	SH	Y	LGT,SGT, DOAP FAP Clinical posting	Written/Vova voce/ Skill assessment /OSCE	5
CM2.3	Describe and demonstrate in a simulated environment the assessmentofbarrierstogoodhealthandhealthseekingbehavior	S	SH	Y	LGT,SGT, DOAP FAP Clinical posting	Written/Vova voce/ Skill assessment /OSCE	
CM2.4	Describe social psychology, community behaviour and community relationship and their impact on health and disease	K	KH	Y	LGT,SGT,FAP Clinical posting	Written/Vova voce	
CM2.5	Describepovertyandsocialsecuritymeasuresanditsrelationship to health and disease	K	KH	Y	LGT,SGT,FAP Clinical posting	Written/Vova voce	
Topic 3: Environmental Health Problems **Number of competencies:(08)** **Number of competencies that require certification:(NIL)**							
CM3.1	Describe the health hazards of air, water, noise, radiation and pollution	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM3.2	Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting	K	KH	Y	LGT,SGT, DOAPFAP Clinical posting	Written/Vova voce	
CM3.3	Describe the aetiology and basis of water borne diseases /jaundice /hepatitis /diarrheal diseases	K	KH	Y	LGT,SGT, DOAPFAP Clinical posting	Written/Vova voce	
CM3.4	Describe the concept of solid waste, human excreta and sewage disposal	K	KH	Y	LGT,SGT	Written/Vova voce	
CM3.5	Describe the standards of housing and the effect of housing on health	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health Importance and their control measures	S	SH	Y	LGT,SGT, DOAPFAP Clinical posting	Written/Vova voce/ Skill assessment/OSCE	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM3.8	Describe the mode of action, application cycle of commonly used insecticides and rodenticides	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
	Topic 4: Principles of health promotion and education Number of competencies:(4) Number of competencies that require certification:(01)						
CM4.1	Describe various methods of health education with their advantages and limitations	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM4.2	Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM4.3	Demonstrate and describe the steps in evaluationof health promotion and education program	S	SH	Y	SGT, DOAPFAP Clinical posting	Written/Vova voce/ Skill assessment /OSCE	
CM 4.4	Conduct a health education session for community awareness in a simulated environment/FAP/clinical posting	S	SH	Y	SGT, DOAPFAP Clinical posting	Written/Vova voce/ Skill assessment /OSCE	1
Topic 5: Nutrition Numberofcompetencies:(22) Numberofcompetenciesthatrequire certification:(5)							
CM5.1	Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological Conditions	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessmentof individuals, families andthecommunity by using the appropriate method	S	SH	Y	DOAP, FAP Clinical posting	Skill assessment /OSCE	
CM5.3	Define and describe common nutrition related health disorders (includingmacro-PEM, Micro-iron, Zn, iodine, Vit.A), their control and management	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment	S	SH	Y	DOAP, FAP Clinical posting	Skill assessment /OSCE	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM5.5	Describe the methods of nutritional surveillance principles nutritional education and rehabilitation in the context of socio-cultural factors.	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM5.6	Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM5.7	Describe food hygiene	K	KH	Y	LGT, SGT FAP Clinical posting	Written/Vova voce FAP Clinical posting	
CM5.8	Describe and discuss the importance and methods of food fortification and effects of additives and adulteration	K	KH	Y	LGT, SGT FAP Clinical posting	Written/Vova voce	
CM5.9	Perform nutritional assessment of individual, family and community using appropriate method and plan a diet for health promotion based on the assessment	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5
CM 5.10	Recommend a dietary plan for a person with DM/ HTN/ Obesity in a simulated environment/FAP/Clinical posting	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5
CM5.11	Plan a diet for an adult which meets the protein (macro nutrients) requirements as per latest RDA-NIN guidelines for vegetarian/ ovo-vegetarian/non-vegetarian	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5
CM5.12	Demonstrate different types of breastfeeding holds, latching, manual expression of breast milk using a baby model and breast model.	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5
CM 5.13	Counsel a mother about complementary feeding for different age groups of the child covering the 8 dietary diversity food groups, quantity, frequency, consistency of the food.	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5
CM 5.14	Demonstrate an awareness of their own personal health and nutrition	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.15	Demonstrate knowledge of the role of nutrition in health promotion and disease prevention	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.16	Have knowledge of breast feeding and complementary feeding Practices	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM 5.17	Ability to counsel mothers on breast feeding with focus on attachment to breast and correct position of the newborn	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.18	Ability to counsel mothers on complementary feeding using National guidelines while being sensitive of cultural and socioeconomic influences	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.19	Assess the nutritional content of processed foods learning to understand labels, and empower patients to make informed nutritional decisions.	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.20	Counsel for diet modification for a diabetic/ hypertensive/obese individual	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.21	Plan and conduct a health education session on nutrition in NCD clinic / in community	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 5.22	Counsel mother on breast feeding and complementary feeding	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 6: Basic statistics and its applications		**Number of competencies:(06)**				**Number of competencies that require certification:(1)**	
CM6.1	Formulate research question for a study	K	KH	Y	SGT, LGT, DOAP	Written/Vova voce/ Skill assessment	
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data	S	SH	Y	SGT, LGT, DOAP	Written/Vova voce/ Skill assessment/OSCE	
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs	S	SH	Y	SGT, LGT, DOAP	Written/Vova voce/ Skill assessment/OSCE	
CM6.4	Enumerate, discuss and demonstrate Common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion	S	SH	Y	SGT, LGT, DOAP	Written/Vova voce/ Skill assessment/OSCE	
CM 6.5	Able to understand use of statistical software for the data analysis	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 6.6	Perform descriptive statistics of a given data-set and interpret	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	5

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
Topic 7: Epidemiology	**Numberof competencies:(11)**			**Number of competencies that require certification: (01)**			
CM7.1	Define Epidemiology and describe and enumerate the principles, concepts and uses	K	KH	Y	SGT, LGT	Written/Vova voce	
CM7.2	Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non-communicable diseases	K	KH	Y	SGT, LGT	Written/Vova voce	
CM7.3	Enumerate, describe and discuss the sources of epidemiological data	K	KH	Y	SGT, LGT	Written/Vova voce	
CM7.4	Define, calculate and interpret morbidity andmortality indicators based on given set of data	S	SH	Y	SGT,DOAP	Written/Skill assessment, OSCE	5
CM7.5	Enumerate, define, describe anddiscuss epidemiologicalstudy designs	K	KH	Y	SGT, LGT	Written/Vova voce	
CM7.6	Enumerate and evaluate the need ofscreening tests	S	SH	Y	SGT,DOAP	Written/Skill Assessment	
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable diseaseand describethe principles of control measures	S	SH	Y	SGT,DOAP	Written/Skill assessment /OSCE	
CM7.8	Describe the principles ofassociation, causation and biases in epidemiological studies	K	KH	Y	SGT, LGT	Written/Vova voce	
CM7.9	Describe and demonstrate the application of computers in epidemiology	S	KH	Y	SGT,DOAP	Written	
CM 7.10	Able to demonstrate development of research proposal	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
CM 7.11	Able to demonstrate the skills for critically appraise the research articles or research data	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 8: Epidemiologyof communicable and non- communicable diseases		**Number ofcompetencies:(07)**		**Number of competencies that require certification:(NIL)**			
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests atthe primary care level for communicable diseases	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM8.2	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at theprimary care level for Non-Communicable diseases (diabetes, Hypertension, Stroke, obesity and cancer etc.)	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM8.3	Enumerate and describedisease specific National Health Programs including their prevention and treatment of a case	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM8.4	Describe the principles and enumerate the measures to control a disease epidemic	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM8.5	Describe and discuss the principles of planning, Implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM8.6	Educate and train health workers in disease surveillance, control & treatment and health education	S	SH	Y	DOAP FAP Clinical posting	Skill assessment /OSCE	
CM8.7	Describe the principles of management of information systems	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
Topic 9: Demography andvital statistics		**Number ofcompetencies:(07)**			**Number of competencies that require certification:(NIL)**		
CM9.1	Define and describe the principles of Demography, Demographic cycle, Vital statistics	K	KH	Y	SGT, LGT	Written/Vova voce	
CM9.2	Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates	S	SH	Y	LGT,SGT, DOAP	Skill assessment /OSCE	
CM9.3	Enumerate and describe the causes of declining sex-ratio and its social and health Implications	K	KH	Y	SGT, LGT	Written/Vova voce	
CM9.4	Enumerate and describe the causes and consequences of population explosion and population dynamics of India.	K	KH	Y	SGT, LGT	Written/Vova voce	
CM9.5	Describe the methods of population control	K	KH	Y	SGT, LGT	Written/Vova voce	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM9.6	Describe theNational PopulationPolicy	K	KH	Y	SGT, LGT	Written/Vova voce	
CM9.7	Enumerate the sources of vital statistics including census, SRS, NFHS, NSSO etc	K	KH	Y	SGT, LGT	Written/Vova voce	
Topic 10: Reproductive maternal and child health Number ofcompetencies:(10) Number of competencies that require certification:(NIL)							
CM10.1	Describe thecurrentstatus of Reproductive, maternal, newborn and Child Health	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.2	Enumerate and describe the methods of screening high-risk groups and common health problems	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.3	Describe local customs and practices during pregnancy, child birth, lactation and child feeding practices	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.4	Describe thereproductive, maternal, newborn &child health (RMCH); child survival and safe motherhood interventions	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.5	Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (GMNCI) and other existing Programs.	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.6	Enumerate and describe various family planning methods, their advantages and shortcomings	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.7	Enumerate and describe the basis and principles of the Family Welfare Program including the organization, technical and operational aspects	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM10.8	Describe the physiology, clinical management and principles of adolescent health including ARSH	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce FAP Clinical posting	
CM10.9	Describe and discuss gender issues and women empowerment	K	KH	Y	SGT, LGT FAP Clinical posting	Written/Vova voce	
CM 10.10	Able to manage the health care services for reproductive and child care services under supervision	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 11: Occupational Health Number ofcompetencies:(06) Number of competenciesthat requirecertification:(NIL)							
CM11.1	Enumerate and describe the presenting features of patients with occupational illness including agriculture	K	KH	Y	SGT, LGT	Written/Vova voce	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM11.2	Describe the role, benefits and functioning of the employees state insurance scheme	K	KH	Y	SGT, LGT	Written/Vova voce	
CM11.3	Enumerate and describe specific occupational health hazards, their risk factors and preventive measures	K	KH	Y	SGT, LGT	Written/Vova voce	
CM11.4	Describe the principles of ergonomics in health preservation	K	KH	Y	SGT, LGT	Written/Vova voce	
CM11.5	Describe occupational disorders of health professionals and their prevention & management	K	KH	Y	SGT, LGT	Written/Vova voce	
CM 11.6	Able to manage the occupational health services at factory or industry level in a simulated environment	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 12: Geriatric services	**Number ofcompetencies:(05)**		**Number of competencies that require certification:(NIL)**				
CM12.1	Define and describe the concept of Geriatric services	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM12.2	Describe health problems of aged population	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM12.3	Describe the prevention of health problems of aged population	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM12.4	Describe National program for elderly	K	KH	Y	LGT,SGT	Written/Vova voce	
CM 12.5	Able to identify the health needs to elderly individuals at the earliest	S	SH	Y	LGT, SGT FAP Clinical posting	Written/Vova voce/OSCE	
Topic 13:	**Disaster Management Number of competencies:(05)**		**Number of competencies that require certification:(NIL)**				
CM13.1	Define and describe the concept of Disaster management	K	KH	Y	LGT,SGT	Written/Vova voce	
CM13.2	Describe disaster management cycle	K	KH	Y	LGT,SGT	Written/Vova voce	
CM13.3	Describe man-made disasters in terworld And in India	K	KH	Y	LGT,SGT	Written/Vova voce	
CM13.4	Describe the details ofthe National Disaster management Authority	K	KH	Y	LGT, SGT	Written/Vova voce	
CM 13.5	Able to understand the management of handing a disaster in a simulated environment	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
Topic 14: Hospitalwaste management Number ofcompetencies:(04) Number of competencies that require certification:(NIL)							
CM14.1	Define and classify hospital waste	K	KH	Y	LGT,SGT, visit to hospital	Written/Vova voce	
CM14.2	Describe various methods of treatment of hospital waste	K	KH	Y	LGT,SGT,visit to hospital	Written/Vova voce	
CM14.3	Describe laws related to hospital waste management	K	KH	Y	LGT, SGT	Written/Vova voce	
CM 14.4	Able to segregate the various hospital waste	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 15: Mental Health Number of competencies:(04) Number of competencies that require certification: (NIL)							
CM15.1	Define and describe the concept of mental Health	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM15.2	Describe warning signals of mental health disorder	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM15.3	Describe National Mental Health program	K	KH	Y	LGT,SGT FAP Clinical posting	Written/Vova voce	
CM 15.4	Able to recognise the mental issues among individuals, families and communities at the earlier stages	S	SH	Y	LGT, SGT FAP Clinical posting	Written/Vova voce/OSCE	
Topic 16: Health planning and management Number of competencies:(05) Number of competencies that require certification:(NIL)							
CM16.1	Define anddescribe theconcept ofHealthplanning	K	KH	Y	LGT,SGT	Written/Vova voce	
CM16.2	Describeplanningcycle	K	KH	Y	LGT,SGT	Written/Vova voce	
CM16.3	Describe Healthmanagement techniques	K	KH	Y	LGT,SGT	Written/Vova voce	
CM16.4	Describe health planning in India and National policies related to health and health planning	K	KH	Y	LGT, SGT	Written/Vova voce	
CM 16.5	Demonstrate understanding of concepts of Health planning in India, various health care economics analysis	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 17: Health care of the community Number of competencies:(06) Number of competencies that require certification: (NIL)							
CM17.1	Define and describe the concept of health care to community	K	KH	Y	LGT,SGT	Written/Vova voce	
CM17.2	Describe community diagnosis	K	KH	Y	LGT,SGT	Written/Vova voce	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning methods	Suggested Assessment methods	Number required to certify P
CM17.3	Describe primary health care, its components and principles	K	KH	Y	LGT,SGT	Written/Vova voce	
CM17.4	Describe National policies related to health and health planning and millennium development goals	K	KH	Y	LGT,SGT	Written/Vova voce	
CM17.5	Describe healthcare delivery in India	K	KH	Y	LGT,SGT	Written/Vova voce	
CM 17.6	Demonstrate understanding of health system functioning in India	S	SH	Y	LGT, SGT, FAP Clinical posting	Written/Vova voce/OSCE	
Topic 18: International Health	**Number of competencies:(3)**				**Number of competencies that require certification (NIL)**		
CM18.1	Define and describe the concept of International health	K	KH	Y	LGT,SGT	Written/Vova voce	
CM18.2	Describe roles of various international health agencies	K	KH	Y	LGT,SGT	Written/Vova voce	
CM 18.3	Demonstrate understanding role of various international and national agencies in health & disease with prevention of emergence and re-emergence of diseases and prevention of pandemic and handling the Pandemic	S	SH	Y	LGT, SGT	Written/Vova voce/OSCE	
Topic 19: Essential Medicine	**Number of competencies:(04)**				**Number of competencies that require certification:(NIL)**		
CM19.1	Define and describe the concept of Essential Medicine List (EML)	K	KH	Y	LGT,SGT	Written/Vova voce	
CM19.2	Describe roles of essential medicine in primary health care	K	KH	Y	LGT,SGT	Written/Vova voce	
CM19.3	Describe counterfeit medicine and its prevention	K	KH	Y	LGT, SGT	Written/Vova voce	
CM19.4	Demonstrate understanding of mechanism of identifying and calculation of requirements of various medicines and essential medicine at primary health care	S	SH	Y	LGT, SGT FAP Clinical posting	Written/Vova voce/OSCE	
Topic 20:	**Recent advances in Community Medicine**	**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
CM20.1	List Important public health events of last five years	K	KH	Y	LGT, SGT	Written/Vova voce	
CM20.2	Describe various issues during outbreaks and their prevention	K	KH	Y	LGT, SGT	Written/Vova voce	
CM 20.3	Describe any event important to Health of the Community	K	KH	Y	LGT, SGT	Written/Vova voce	
CM 20.4	Demonstrate awareness about laws pertaining to practice of community medicine	K	KH	Y	LGT, SGT	Written/Vova voce	

GENERAL MEDICINE (CODE: GM)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GENERAL MEDICINE (Topics=29,Competencies=525)							
Topic 1: Heart failureNumber of competencies: (27) Number of competencies that require certification : (3)							
GM 1.1	Describe and discuss the epidemiology, genetic basis ,pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.2	Describe and discuss the aetiology, microbiology, pathogenesis Clinical evolution, criteria, recognition and management of rheumatic fever, and rheumatic valvular heart disease, penicillin prophylaxis and its complications including infective endocarditis	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.3	Define and Stage heart failure	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.4	Describe, discuss, and differentiate the processes involved in Right Vs Left heart failure, systolic vs diastolic failure	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.5	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.6	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrhythmias, anaemia, thyrotoxicosis, dietary factors drugs etc.	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.7	Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	LGT / SGT	Application based question/ Viva voice	
GM 1.8	Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis	S	SH	Y	Bedside clinic	Long case /Short case Skill assessment OSCE	
GM 1.9	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and Estimate its	S	SH	Y	Bed side clinic, DOAP	Long case /Short case	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation					Skill assessment OSCE	
GM 1.10	Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure	S	SH	Y	Bed side clinic, DOAP	Long case / Short case, Skill assessment, OSCE	
GM 1.11	Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade	S	SH	Y	Bed side clinic, DOAP	Long case /Short case, Skill assessment, OSCE	
GM 1.12	Demonstrate and measure jugular venous distension	S	SH	Y	Bed side clinic, DOAP	Long case /Short case, Skill assessment, OSCE	3
GM 1.13	Identify and describe the Timing, pitch quality conduction and significance of precordial murmurs ,their variations , use of dynamic auscultation	S	SH	Y	Bed side clinic, DOAP	Long case /Short case, Skill assessment, OSCE	3
GM 1.14	Generate a differential diagnosis based on the clinical presentation of various heart diseases and prioritise it based on the most likely diagnosis	S	SH	Y	Bed side clinic, DOAP	Long case /Short case, Skill assessment, OSCE	
GM 1.15	Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures	S	SH	Y	Bed side clinic, DOAP	Long case /Short case, Skill assessment, OSCE	
GM 1.16	Perform and interpret a 12 lead ECG	S	SH	Y	Bed side clinic DOAP	Skill assessment OSCE	
GM 1.17	Enumerate the indications for and describe the findings of heart failure with the following investigations including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram	K	KH	N	LGT, SGT, Bed side clinic	Application based question/ Viva voice	
GM 1.18	Discuss the severity of valvular heart disease based on the clinical and laboratory and Imaging features and describe the level of intervention required including surgery	K S	KH/ SH	Y	LGT, SGT, Bed side clinic	Application based question, Long case /short	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
						case,Skill assessment, OSCE Viva voce	
GM 1.19	Describe and discuss and identify the clinical features of acute and sub-acute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy	K S	KH/ SH	Y	LGT, SGT, Bed side clinic	Application based question, Long case /short case, Skill assessment, OSCE, Viva voce	
GM 1.20	Assist and demonstrate the proper technique in collecting specimen for blood culture	S	SH	Y	DOAP Skills lab	Skill assessment OSCE	
GM 1.21	Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations	K S/C	K SH	Y	LGT, SGT, Role play	Application based question, Skill assessment OSCE	
GM 1.22	Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides	K	KH		LGT, SGT	Application based question, /Viva voce	
GM 1.23	Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation	K	KH	Y	LGT, SGT, Bedside clinic	Application based question,/Viva	
GM 1.24	Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology	S	SH	Y	SGT, Bedside clinic	Application based question, Long case /Short case, Skill assessment, OSCE	
GM 1.25	Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease	K	KH	Y	SGT, Bedside clinic	Application based question Viva voce	
GM 1.26	Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and	S	SH		SGT, Bedside clinic	Long case /Short case	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease					Skill assessment OSCE, Viva voce	
GM 1.27	Administer an intramuscular injection with an appropriate communication to the patient	S	SH	Y	Bedside clinic Skills lab	Skill assessment OSCE Log book	2
Topic 2: Acute Myocardial Infarction / IHD		**Number of competencies: (24)**		**Number of competencies that require certification : (03)**			
GM 2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	LGT / SGT	Application based question /Viva voce	
GM 2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD	K	KH	Y	LGT / SGT	Application based question /Viva voce	
GM 2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis	K	KH	Y	LGT / SGT	Application based question /Viva voce	
GM 2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	LGT / SGT	Application based question /Viva voce	
GM 2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes	K	KH	Y	LGT / SGT	Application based question /Viva voce	
GM 2.6	Elicit document and present an appropriate history that includes onset evolution, presentation risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes	S	SH	Y	Bedside clinic/DOAP	Skill assessment	
GM 2.7	Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation	S	SH	Y	Bedside clinic/DOAP	Skill assessment	
GM 2.8	Generate document and present a differential diagnosis based on the clinical presentation and prioritise based on “cannot miss”, most likely diagnosis and severity	S	SH	y	SGT/Bedside clinic	Skill assessment	
GM 2.9	Distinguish and differentiate between stable and unstable angina and AMI based on the clinical presentation	S	SH	y	Bedside clinic/DOAP	Skill assessment	
GM 2.10	Order, perform and interpret an ECG	S	SH	y	Bedside clinic/DOAP	Skill assessment	3
GM 2.11	Order and interpret a Chest X-ray and markers of acute myocardial	S	SH		Bedside clinic/DOAP	Skill assessment	3

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	Infarction						
GM 2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context	S	SH		Bedside clinic/DOAP	Skill assessment	
GM 2.13	Discuss and enumerate the indications for and findings on echocardiogram, stress testing and coronary angiogram	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.14	Discuss and describe the indications for admission to a coronary care unit and supportive therapy for a patient with acute coronary Syndrome	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.16	Discuss and describe the indications for acute thrombolysis, PTCA and CABG	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.17	Discuss and describe the indications and methods of cardiac Rehabilitation	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of Dyslipidemia	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.19	Discuss and describe the pathogenesis, recognition and management of complications of acute coronary syndromes including arrhythmias, shock, LV dysfunction, papillary muscle rupture and pericarditis	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes	K	KH	Y	LGT / SGT	Written/Viva voce	
GM 2.21	Observe and participate in a controlled environment of ACLS Program	S	SH	Y	DOAP	Skill assessment	
GM 2.22	Perform and demonstrate in a mannequin BLS	S	P	Y	DOAP	Skill assessment(WPBA)	3
GM 2.23	Describe and discuss the indications for nitrates, anti-platelet agents, gpIIb IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes	K	KH	Y	LGT / SGT	Written /Viva	
GM 2.24	Counsel and communicate to patients with empathy lifestyle	C/A	SH	Y	DOAP,Role play	Skill	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	changes in atherosclerosis / post coronary syndromes					assessment(WPBA)	
Topic 3: Pneumonia	**Number of competencies: (22)**		**Number of competencies that require certification : (04)**				
GM3.1	Define, discuss, describe and distinguish community acquired pneumonia nosocomial pneumonia and aspiration pneumonia.	K	KH	Y	LGT, SGT	Application Based Questions / Viva voce	
GM3.2	Discuss and describe the aetiologies of various kinds of pneumonia and their microbiology depending on the setting and Immune status of the host	K	KH	Y	LGT, SGT	Application Based Questions / Viva voce	
GM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	KH	Y	LGT, SGT	Application Based Questions / Viva voce	
GM3.4	Elicit document and present an appropriate history including the evolution, risk factors including Immune status and occupational Risk	S	SH	Y	Bedside clinic, DOAP	Long/short case/OSCE	
GM3.5	Perform, document and demonstrate a physical examination including general examination and appropriate examination of the lungs that establishes the diagnosis, complications and severity of Disease	S	SH	Y	Bedside clinic, DOAP	Long/short case/OSCE	3
GM3.6	Generate document and present a differential diagnosis based on the clinical features, and prioritize the diagnosis based on the Presentation	K	KH	Y	Bedside clinic, DOAP	Long/short case	
GM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG	S	SH	Y	Bedside clinic, DOAP, Tutorial	Skill assessment OSCE/ viva Voce	
GM3.8	Demonstrate on a mannequin, correct technique of collection of blood sample for an arterial blood gas examination	S	SH	Y	DOAP	Skill assessment OSCE	
GM3.9	Interpret results of arterial blood gas examination report	K	KH	Y	Bedside clinic, SGT	Viva voce	2
GM3.10	Demonstrate on a mannequin, correct technique of pleural fluid Aspiration	S	SH	Y	DOAP	Skill assessment OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM3.11	Outline the correct tests that require to be performed and interpret results of pleural fluid aspiration report	K S	KH SH	Y	Bedside clinic, SGT	Skill assessment OSCE Viva voce	2
GM3.12	Demonstrate on a mannequin, the correct technique of collection of blood for culture	S	SH	Y	DOAP,	Skill assessment OSCE	
GM 3.13	Interpret results of blood culture report.	K	KH	Y	Bedside clinic, SGT	Viva voce	
GM3.14	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialized testing	K	KH	Y	Bedside clinic, Tutorial	Viva voce	
GM3.15	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and ant Microbial spectrum	S	SH	Y	Bedside clinic, Tutorial	OSCE Viva voce	2
GM3.16	Select, describe and prescribe based on culture and sensitivity appropriate empirical Antimicrobial based on the pharmacology and antimicrobial spectrum.	S	SH	Y	Bedside clinic, SGT	OSCE Viva voce	
GM3.17	Describe and enumerate the indications for hospitalization in patients with pneumonia	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM3.18	Describe and enumerate the indications for isolation and barrier nursing in patients with pneumonia	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 3.19	Describe and discuss the supportive therapy in patients with pneumonia including oxygen use and indications for ventilation	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 3.20	Communicate and counsel patient on family on the diagnosis and therapy of pneumonia	C/A	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE	
GM 3.21	Discuss, describe, enumerate the indications for pneumococcal and influenza vaccines	K	KH	Y	LGT / SGT	Application based questions/ Viva voce	
GM 3.22	Communicate and counsel patient for pneumococcal and influenza Vaccines	S/C	SH	Y	Bedside clinic / DOAP	OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
Topic 4: Fever and febrile syndromes	**Number of competencies: (20)**			**Number of competencies that require certification : (01)**			
GM4.1	Describe and discuss the febrile response and the influence of host Immune status, risk factors, special populations (elderly, Immunosuppressed, malignancy, neutropenia HIV and travel) and comorbidities on the febrile response	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 4.2	Describe and discuss the patho-physiology and differences between fever and hyperthermia.	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM 4.3	Enumerate various common causes of fever and hyperthermia in various regions in India.	K	K	Y	LGT, SGT	MCQs/ Written, Viva voce	
GM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node Malignancies	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM4.6	Discuss the approach to the patient with Acute Febrile Illness.	K	KH	Y	LGT, SGT	Application based question, , Viva voce	
GM4.7	Discuss and describe the pathophysiology and manifestations of the sepsis syndrome	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM4.8	Describe and discuss the pathophysiology, clinical features and management of heat related illness (heat cramps, heat exhaustion and heat stroke).	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM4.9	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host neutropenic host nosocomial host and a host with HIV Disease	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM4.10	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, Immune status, comorbidities, risk factors, exposure through occupation, travel and environment and	S	SH	Y	Bedside clinic, DOAP	Long/short case/OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	medication use						
GM4.11	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)	S	SH	Y	Bedside clinic, DOAP	Long/short case or OSCE	2
GM4.12	Generate a differential diagnosis and prioritise based on clinical features that help distinguish between infective, inflammatory, malignant and rheumatologic causes	K	SH	Y	Bedside clinic, SGT	Long/short case	
GM4.13	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray and other Imaging, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture, serology, FNAC, biopsy, bone marrow examination and QBC.	K	SH	Y	Bedside clinic, SGT, Tutorial	Skill assessment (OSCE/ viva Voce)	
GM4.14	Enumerate in a patient with prolonged fever, the indications for various tests and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy	K	KH	N	LGT, SGT	Viva voce	
GM4.15	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment	S	SH	N	Skills lab- DOAP	Log book/documentation	
GM4.16	Enumerate the indications for use of Imaging in the diagnosis of febrile syndromes	K	K	N	LGT, SGT	MCQ/ Written, Viva voce	
GM4.17	Interpret a PPD (Mantoux) in a given patient	S	SH	Y	DOAP	Logbook Documentation/OSCE	
GM4.18	Develop and present an appropriate diagnostic plan for patient with prolonged fever based on the clinical presentation, most likely diagnosis in a prioritised and cost-effective manner	K	KH	Y	Bedside clinic SGT	Application based question/ Viva voce	
GM4.19	Develop an appropriate empiric treatment plan based on the patient's clinical and Immune status pending definitive diagnosis	S	SH	Y	SGT Tutorial	Skill assessment OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM4.20	Communicate to the patient and family the diagnosis and treatment in a case of prolonged fever	C	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE	
Topic 5: Liver disease	**Number of competencies: (17)**			**Number of competencies that require certification : (02)**			
GM 5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.2	Describe and discuss the etiology and pathophysiology of various types of liver diseases.	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.3	Describe and discuss the epidemiology, microbiology, Immunology and clinical evolution of infective (viral) hepatitis	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.4	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.5	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis of liver and portal hypertension including ascites, spontaneous bacterial peritonitis, hepato-renal syndrome, hepatic encephalopathy, acute GI bleed and hepatocellular Carcinoma	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.6	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.7	Describe and discuss the pathophysiology, clinical evolution and complications Cholelithiasis and cholecystitis	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.8	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history in patients with liver disease	S	SH	Y	Bedside clinic, DOAP session	(Long/short case/OSCE) Documentation in Journal	
GM 5.9	Perform a systematic examination that establishes the diagnosis	S	SH	Y	Bedside clinic, DOAP	(Long/short case or	2

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of porto-systemic hypertension and hepatic encephalopathy				session	OSCE) Documentation in Journal	
GM 5.10	Generate a differential diagnosis and prioritize based on clinical features that suggest a specific aetiology for the presenting symptom in patient with liver disease	K S	KH SH	Y	Bedside clinic, SGT	(Long/short case) Documentation in Journal	
GM 5.11	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, liver function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases	S	SH	Y	Bedside clinic, SGT Tutorial	(OSCE/ viva Voce)	
GM 5.12	Enumerate the indications for ultrasound and other Imaging studies including MRCP and ERCP and describe the findings in liver disease	K	KH	Y	Bedside clinic, SGT Tutorial	Application based question / Viva voce	
GM 5.13	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	K	KH	Y	LGT/ Bedside clinic/ SGT Tutorial	Application based question / Viva voce	
GM 5.14	Assist in the performance and interpret the findings of an ascitic fluid analysis	S	SH	Y	Bedside, DOAP, Skills Lab	Documentation in Logbook / Viva voce,OSCE	2
GM 5.15	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis, acute GI Bleed , hepatic encephalopathy and hepatocellular carcinoma	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 5.16	Enumerate the indications, precautions and counsel patients on vaccination for hepatitis	K /C	KH SH	Y	LGT, SGT Bedside clinic Role play	Application based questions / Viva voce/ OSCE	
GM 5.17	Enumerate the indications for hepatic transplantation	K	K	Y	LGT, SGT	Application based questions / Viva voce	
Topic 6: HIV	**Number of competencies: (22)**			**Number of competencies that require certification : (01)**			
GM6.1	Describe and discuss the symptoms and signs of acute HIV sero-conversion	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.2	Define and classify HIV AIDS based on the CDC criteria	K	K	Y	LGT, SGT	MCQ/Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
						Viva voce	
GM6.3	Describe and discuss the relationship between CD4 count and the risk of opportunistic infections	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.7	Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes risk factors for HIV, mode of infection, other sexually transmitted diseases, risks for opportunistic infections and nutritional status	S	SH	Y	Bedside clinic, DOAP	Short case/OSCE	
GM6.8	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology for the presenting symptom	S	SH	Y	Bedside clinic, DOAP,SGT	Short case/OSCE	
GM6.9	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	S	SH	Y	Bedside clinic, SGT Tutorial	Skill assessment (OSCE/ viva Voce)	
GM6.10	Choose and interpret appropriate diagnostic tests to diagnose opportunistic infections including CBC, sputum examination and cultures, blood cultures, stool analysis, CSF analysis, Chest radiographs.	S	KH	Y	Bedside clinic, SGT Tutorial	Skill assessment (OSCE/ viva Voce)	
GM6.11	Enumerate the indications and describe the findings for CT of the chest, brain and MRI Brain in a patient with opportunistic infections	K	KH	N	Bedside clinic SGT, Tutorial	Application based question, Viva voce	
GM6.12	Enumerate the indications for and interpret the results of: Pulse oximetry, ABG, Chest Radiograph in a patient with opportunistic infections	K	K, KH	Y	Bedside clinic, SGT Tutorial	Written/MCQ, Viva voce	
GM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea in a patient suffering from HIV/AIDS	K	K, KH	Y	LGT, SGT	Written/MCQ, Viva voce	
GM6.14	Discuss and describe the principles of HAART, the classes of	K	KH	Y	LGT,	Application based	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	antiretroviral used, adverse reactions and interactions in a patient suffering from HIV/AIDS				SGT	question, Viva voce	
GM 6.15	Discuss and describe the pathogenesis of IRIS and its management.	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.16	Discuss and describe the principles and regimens used in post exposure prophylaxis	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.17	Enumerate the indications and discuss prophylactic drugs used to prevent HIV related opportunistic infections	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM6.18	Counsel patients on prevention of HIV transmission.	C/S	SH	Y	Bedside clinic DOAP	Skills assessment - OSCE	3
GM6.19	Communicate diagnosis, treatment plan and subsequent follow up plan to patients with HIV/AIDS	C/S	SH	Y	Bedside clinic DOAP	Skills assessment - OSCE	
GM6.20	Communicate with patients with HIV/AIDS on the importance of medication adherence	C/S	SH	Y	Bedside clinic DOAP	Skills assessment - OSCE	
GM6.21	Demonstrate understanding of ethical and legal issues regarding patient confidentiality and disclosure in patients with HIV/AIDS	K/A	SH	Y	Bedside clinic DOAP, SGT	Skills assessment - OSCE Viva voce	
GM6.22	Demonstrate a non- judgmental attitude to patients with HIV/AIDS and to their lifestyles including gender orientation	A	SH	Y	Bedside clinic DOAP SGT	Skills assessment - OSCE	
Topic 7: Rheumatologic problems		**Number of competencies: (22)**			**Number of competencies that require certification : (NIL)**		
GM7.1	Describe the pathophysiology and genetic basis of autoimmune disease	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.2	Classify cause of joint pain based on the pathophysiology	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.3	Develop a systematic clinical approach to joint pain based on The pathophysiology	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.4	Describe and discriminate acute, subacute and chronic causes Of joint pain	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.5	Discriminate, describe and discuss arthralgia from arthritis, articular from periarticular complaints and Mechanical from inflammatory causes of joint pain	K	KH	Y	LGT, SGT	Written/ Vivavoce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM7.6	Describe the common signs and symptoms of Articular and periarticular diseases	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.7	Describe the systemic manifestations of rheumatologic disease	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM7.8	Elicit document and present a medical history that will differentiate the aetiologies of disease	S	SH	Y	Bedside clinic,DOAP	Skill assessment/OSCE	
GM7.9	Perform a systematic examination of all joints, muscle and skin That will establish the diagnosis andseverity of disease	S	SH	Y	Bedside clinic,DOAP	Skill assessment	
GM7.10	Generate a differential diagnosis and prioritise based on Clinical features that suggest a specific aetiology	K/S	KH	Y	Bedside clinic, SGT	Skill assessment/Written	
GM7.11	Describe the appropriate diagnostic work up based on the presumed aetiology and Enumerate the indications for and interpret the results of : CBC, anti-CCP,RA, ANA,DNA andother tests Of autoimmunity	K	KH	Y	Bedside clinic, SGT	Skill assessment/Written /OSCE	
GM7.12	Enumerate the indications for arthrocentesis	K	K	Y	SGT,LGT	Written/ Vivavoce/log book	
GM7.13	Enumerate the indications and interpret plain radiographs of joints	K	SH	Y	Bedside clinic, SGT	Skill assessment/OSCE	
GM7.14	Communicate diagnosis, treatment plan and subsequent follow Up plan to patients	C	SH	Y	DOAP	Skill Assessment /OSCE	
GM7.15	Develop an appropriate treatment plan for patients with rheumatologic diseases	K	KH	Y	Bedside clinic, SGT	Application Based questions/Skil l assessment/Written	
GM7.16	Select, prescribe and communicate appropriate medications for relief of joint pain and preventive therapy for crystalline arthropathies	K/C	SH	Y	DOAP	Application based questions/Skill assessment/Written	
GM7.17	Select, prescribe and communicate treatment option for systemic rheumatologic conditions	K/C	SH	Y	DOAP	Skill assessment/OSCE	
GM7.18	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases	K	KH	Y	Bedside clinic, SGT	Skill assessment/Written //OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM7.19	Communicate and incorporate patient preferences in the choice Of therapy	C/A	SH	Y	DOAP	Skill assessment//OSCE	
GM7.20	Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions	C	SH	Y	DOAP	Application based questions/Skill assessment//OSCE	
GM7.21	Demonstrate an understanding of the impact of Rheumatologic conditions on quality of life, well-being, work and family	A	SH	Y	DOAP	Skill assessment/OSCE	
GM7.22	Determine the need fors pecialist consultation	K	K	Y	SGT,LGT	Vivavoce	
Topic 8: Hypertension	**Number of competencies: (19)**				**Number of competencies that require certification : (NIL)**		
GM 8.1	Describe and discuss the epidemiology, genetic basis aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.3	Define and classify hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.4	Describe and discuss the differences between primary and secondary hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.5	Define, describe and discuss and recognise hypertensive urgency and emergency	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.6	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.7	Describe, discuss and identify target organ damage due to Hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.8	Elicit document and present a medical history that includes: duration and levels, symptoms, comorbidities, lifestyle, risk factors, family history, psychosocial and environmental factors, dietary assessment, previous and concomitant therapy	S	SH	Y	Bedside clinic, DOAP	Skill assessment	
GM 8.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	S	SH	Y	Bedside clinic, DOAP	Skill assessment	

GM 8.11	Describe the appropriate diagnostic work up based on the presumed aetiology	K	KH	Y	SGT	Written / Viva	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
GM 8.12	Enumerate the indications for and interpret the results of : CBC, Urine routine, BUN, Cr, Electrolytes, Uric acid, ECG	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.13	Develop an appropriate treatment plan for essential hypertension	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.14	Recognise, prioritise and manage hypertensive emergencies	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 8.15	Develop and communicate to the patient lifestyle modification including weight reduction, moderation of alcohol intake, physical activity and sodium intake	C	SH	Y	DOAP	SELF ASSESSMENT	
GM 8.16	Perform and interpret a 12 lead ECG	S	P	Y	DOAP	Log Book/Skills Station	
GM 8.17	Counsel a patient and incorporate patient preferences in the management of HTN	A/C	SH	Y	DOAP	Skill assessment	
GM 8.18	Demonstrate understanding of the impact of Hypertension on quality of life, well being, work and family	A	SH	Y	Bed Side Clinic/DOAP	Faculty Observation	
GM 8.19	Determine the need for specialist consultation	K	KH	Y	LGT/SGT	Written / Viva	
Topic 9: Anaemia		**Number of competencies: (21)**			**Number of competencies that require certification : (NIL)**		
GM9.1	Define, describe and classify anemia based on red blood cell sizeandreticulocyte count	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM9.2	Describe and discuss the morphological characteristics, aetiologyandprevalence ofeachofthe causes ofanemia	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM9.3	Elicit document and present a medical history that includes symptoms, risk factors including GI bleeding, prior history, medications, menstrual history, andfamilyhistory	S	SH	Y	Bed side clinic, DOAP	Skill assessment	
GM9.4	Perform a systematic examination that includes : generalexamination for pallor, oral examination, DOAP of Hyperdynamic circulation, lymphnode and splenic examination	S	SH	Y	Bedside clinic	Skill assessment/OSCE	
GM9.5	Generate a differential diagnosis and prioritise based on Clinical features that suggest a specific aetiology	S	SH	Y	Bedside clinic, DOAP	Skill assessment/Written	

GM9.6	Describe the appropriate diagnostic work up based on The presumed aetiology	S	SH	Y	Bedside clinic, DOAP	Skill assessment/Written	
GM9.7	Describe and discuss the meaning and utility of components of the hemogram, various tests for iron deficiency, red cell indices, reticulocytecount, ironstudies, peripheral smear, B12 and folate levels	K	KH	Y	LGT, SGT	Written/ Viva voce/ Skill assessment	
GM9.8	Describe the indications and interpret the results of a bone marrowaspirations and biopsy	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM9.8	Describe the indications and interpret the results of a bone marrowaspirations and biopsy	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM9.9	Describe, develop a diagnostic plan to determine the aetiology Ofanemia	K	KH	Y	LGT, SGT	Written/ Viva voce/ Skill assessment	
GM9.10	Prescribe replacement therapy with iron, B12, folate	S	SH	Y	Bedside clinic, DOAP	Skill assessment/Written	
GM9.11	Describe the national programs for anemia prevention	K	KH	Y	LGT, SGT	Written/Vivavoce	
GM9.12	Communicate the diagnosis and treatment appropriately to patients	C	SH	Y	DOAP	Skill assessment/OSCE	
GM9.13	Incorporatepatientpreferencesinthemanagementofanemia	C	SH	Y	DOAP	Skill assessment/OSCE	
GM9.14	Describe the indications for blood transfusion and the Appropriate use of blood components	K	KH	Y	LGT, SGT	Written/ Viva voce/ Skill assessment	
GM9.15	Describe the precautions required necessary when performing A blood transfusion	K	KH	Y	LGT, SGT	Written/ Viva voce/ Skill assessment	
GM9.16	Communicate and counsel patients with methods to prevent nutritional Anemia	C	SH	Y	DOAP	Skill assessment/OSCE	
GM9.17	Determine the need fors pecialist consultation	K	KH	Y	LGT,SGT	Written/OSCE	
Topic 10: Acute Kidney Injury and Chronic renal failure		**Number of competencies: (24)**		**Number of competencies that require certification : (01)**			
GM10.1	Define, describe, classify, differentiate between the pathophysiologic causes of acute and chronic renal failure	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.2	Describe the pathophysiology and causes of pre renal ARF, Renal and post-renal ARF	K	KH	Y	LGT, SGT	Written/ Vivavoce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM10.3	Describe the evolution, natural history and treatment of ARF	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.4	Describe and discuss the aetiology and staging ofCKD	K	KH	Y	LGT,SGT	Written/ Vivavoce	
GM10.5	Describe and discuss the pathophysiology and clinical findings Of uraemia	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.6	Classify, describe and discuss the significance ofproteinuria in CKD	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.7	Describe and discuss the pathophysiology of anemia and hyperparathyroidismin CKD	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.8	Describe and discuss the association between CKD glycemia And hypertension	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.9	Elicit document and present a medical history that will differentiatethe aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and Systemiccauses	S	SH	Y	Bedside clinic, DOAP	Skill assessment	
GM10.10	Perform a systematic examination that establishes the diagnosisand severity including determination of volume status, presence ofedema and heart failure, features of uraemia and Associated systemic disease	S	SH	Y	Bedside clinic, DOAP	Skill assessment	
GM10.11	Generate a differential diagnosis and prioritise based on clinical features that suggest a specificaetiology	K	KH	Y	DOAP, SGT	Skill assessment/Written / Vivavoce	
GM10.12	Describe the appropriate diagnostic work up based on the presumed aetiology	K	SH	Y	DOAP, SGT	Skill assessment/Written / Vivavoce	
GM10.13	Enumerate the indications for and interpret the results of : renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap, FENa (Fractional Excretion of Sodium),CrCl (Creatinine Clearance) and renal ultrasound	K	KH	Y	DOAP, SGT	Skill assessment/Written / Vivavoce	2
GM10.14	Identify theECG findings in hyperkalemia	S	SH	Y	DOAP, SGT	Skill assessment/Written / Vivavoce	
GM10.15	Describe and discuss the indications to performarterial blood	S	P	Y	DOAP	documentation in	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	gasanalysis: interpret the data					logbook	
GM10.16	Describe and discuss the indications for and insert a Peripheral intravenous catheter	S	P	Y	DOAP,Bedside clinic	documentation inlogbook	
GM10.17	Communicate diagnosis, treatment plan and subsequent follow up plan to patients	C	SH	Y	DOAP	Skill assessment/OSCE	
GM10.18	Counsel patients on a renal diet	K	SH	Y	DOAP	Skillassessment/OSCE	
GM10.19	Identify and describe the priorities in the management of ARFincluding diet, volume management, alteration in doses of drugs, monitoring and indicationsfor dialysis	K/C	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.20	Describe and discuss supportive therapy in CKD including diet, anti-hypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and Secondary hyperparathyroidism	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.21	Describe and discuss the indications for renal dialysis	C/A	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.22	Describe and discuss the indications for renal replacement therapy	C	KH	Y	LGT,SGT	Written/ Vivavoce//OSCE	
GM10.23	Describe discuss and communicate the ethical and legal Issues involved in renal replacement therapy	C/A	KH	Y	LGT, SGT	Written/ Vivavoce	
GM10.24	Recognise the Impact of CKD on patient's quality of life, well- being, work and family and Incorporate patient preferences into the care of CKD	A/C	KH	Y	LGT, SGT,Bedside clinic	observationbyfaculty/OSCE	
Topic 11: Diabetes Mellitus		**Number of competencies: (24)**			**Number of competencies that require certification : (01)**		
GM 11.1	Define and classify diabetes	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.3	Describe and discuss the epidemiology and pathogenesis and risk factors economic Impact and clinical evolution of type 2 diabetes	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.4	Describe and discuss the genetic background and the influence of the environment on diabetes	K	KH	Y	LGT, SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes						
GM 11.6	Describe and discuss the pathogenesis and precipitating factors, recognition and management of diabetic emergencies	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.7	Elicit document and present a medical history that will differentiate the aetiologies of diabetes including risk factors, precipitating factors, lifestyle, nutritional history, family history, medication history, co-morbidities and target organ disease	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.8	Perform a systematic examination that establishes the diagnosis and severity that includes skin, peripheral pulses, blood pressure measurement, fundus examination, detailed examination of the foot (pulses, nervous and deformities and injuries)	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.9	Describe and recognise the clinical features of patients who present with a diabetic emergency	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.12	Perform and interpret a capillary blood glucose test	K	KH	Y	LGT, SGT	Written/Viva voce	2
GM 11.13	Perform and interpret a urinary ketone estimation with a dipstick	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.14	Recognise the presentation of hypoglycaemia and outline the principles on its therapy	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.15	Recognise the presentation of diabetic emergencies and outline the principles of therapy	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.17	Outline a therapeutic approach to therapy of T2Diabetes based on presentation, severity and complications in a cost-effective manner	K	KH	Y	LGT, SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.19	Demonstrate and counsel patients on the correct technique to administer insulin	K	KH	Y	LGT,SGT	Written/Viva voce	
GM11.20	Demonstrate to and counsel patients correct technique on the of self-monitoring of blood glucoses	K	KH	Y	LGT,SGT	Written/Viva voce	
GM11.21	Recognise the Importance of patient preference while selecting therapy for diabetes	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.23	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of diabetic ketoacidosis	K	KH	Y	LGT, SGT	Written/Viva voce	
GM 11.24	Describe the precipitating causes, pathophysiology, recognition, clinical features, diagnosis, stabilisation and management of Hyperosmolar non ketotic state	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 12: Thyroid Dysfunction	**Number of competencies: (14)**				**Number of competencies that require certification : (01)**		
GM 12.1	Describe the epidemiology, genetic basis and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 12.2	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	LGT,SGT	Written	
GM 12.3	Describe and discuss the principles of radio iodine uptake in the diagnosis of thyroid disorders	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 12.4	Elicit document and present an appropriate history that will establish the diagnosis cause of thyroid dysfunction and its severity	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 12.5	Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and severity including systemic signs of thyrotoxicosis and hypothyroidism, palpation of the rhythm abnormalities neck palpation of the thyroid and lymph nodes and cardiovascular findings	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 12.6	Demonstrate the correct technique to palpate the thyroid	S	SH	Y	Bedside clinic,DOAP	Skill assessment	
GM 12.7	Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis	K	KH	Y	Bedside clinic,SGT	Written	
GM 12.8	Order and interpret diagnostic testing based on the clinical diagnosis including CBC, thyroid function tests and ECG and radio iodine uptake and scan	S	SH	Y	Bedside clinic,DOAP	Skill assessment	
GM 12.9	Identify atrial fibrillation, pericardial effusion and bradycardia on ECG	S	SH	Y	Bedside clinic,DOAP	Skill assessment	
GM 12.10	Interpret thyroid function tests in hypo and hyperthyroidism	K	KH	Y	LGT,SGT	Written/Viva voce	2
GM 12.11	Describe and discuss the iodisation programs of the government of India	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 12.12	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 12.13	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status	S/C	SH	Y	Skill Lab	Skill assessment	
GM 12.14	Describe and discuss the indications of thionamide therapy, radio iodine therapy and surgery in the management of thyrotoxicosis	K	KH	Y	Bedside clinic	Written/Viva voce	
	Topic 13: Common Malignancies / Oncology	**Number of competencies: (19)**		**Number of competencies that require certification : (NIL)**			
GM 13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	LGT,SGT	Short note/Viva Voice	
GM 13.2	Describe the genetic basis of selected cancers	K	K	Y	LGT,SGT	Short note/Viva Voice	
GM 13.3	Describe the relationship between infection and cancers	K	K	Y	LGT,SGT	Short note/Viva Voice	
GM 13.4	Describe the natural history, presentation, course, complications	K	K	N	LGT,SGT	Short note/Viva	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	and cause of death for common cancers					Voice	
GM 13.5	Describe the common issues encountered in patients at the end of life and principles of management of end-of-life care.	K	K	N	LGT,SGT	Short note/Viva Voice	
GM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	LGT,SGT	Short note/Viva voice	
GM 13.7	Elicit document and present a history that will help establish the aetiology of cancer and includes the appropriate risk factors, duration and evolution	S	K	Y	Bedside clinic	Skill assessment/Short Case	
GM13.8	Perform and demonstrate a physical examination that includes an appropriate general and local examination that leads to the diagnosis, extent spread and complications of cancer	S	SH	Y	Bedside clinic	Skill assessment/Short case	
GM13.9	Demonstrate in a mannequin the correct technique for performing breast exam rectal examination and cervical examination and pap smear	S	K	Y	Bedside clinic	Skill assessment/Short Case	
GM13.10	Generate a differential diagnosis based on the presenting symptoms and clinical features in a cancer patient and identify the most likely diagnosis	S	K	Y	Bedside clinic	Skill assessment / Short Case	
GM13.11	Order and interpret diagnostic testing based on the clinical diagnosis in a cancer patient. Including CBC and stool occult blood and prostate specific antigen	S	K	K	Bedside clinic	Skill assessment/ Short case	
GM13.12	Describe the indications and interpret the results of Chest X Ray, mammogram, skin and tissue biopsies and tumor markers used in common cancers	K	KH	Y	Bedside clinic,SGT	Short note/Viva voice	
GM13.13	Describe and assess pain and suffering objectively in a patient with cancer	K	KH	Y	Bedside clinic,SGT	Short note/Vivavoice	
GM13.14	Describe the indications for surgery, radiation and chemotherapy for common malignancies	K	KH	Y	Bedside clinic,SGT	Short note/Viva Voice	
GM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies	K	KH	Y	Bedside clinic,SGT	Short note/Viva Voice	
GM13.16	Demonstrate an understanding of needs and preferences of patients when choosing curative and palliative therapy	A/C	KH	Y	Bedside clinic,SGT	Short note/Viva voice	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	K	KH	Y	Bedside clinic,SGT	Short note/Viva Voice	
GM13.18	Describe and discuss the ethical and the medico legal issues involved in end-of-life care	K	KH	Y	Bedside clinic,SGT	Short note/Viva Voice	
GM13.19	Describe the therapies used in alleviating suffering in patients at the end of life	K	KH	Y	Bedside clinic,SGT	Short note/Viva Voice	
Topic 14: Obesity	**Number of competencies: (14)**			**Number of competencies that require certification : (NIL)**			
GM 14.1	Define and measure obesity as it relates to the Indian population	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 14.1	Define and measure obesity as it relates to the Indian population	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 14.3	Describe and discuss the monogenic forms of obesity	K	KH	Y	LGT,SGT	Written/Viva voce	
GM 14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity	K	K	Y	LGT,SGT	Written/Viva voce	
GM 14.5	Describe and discuss the natural history of obesity and its complications	K	K	Y	LGT,SGT	Written/Viva voce	
GM 14.6	Elicit and document and present an appropriate history that includes the natural history, dietary history, modifiable risk factors, family history clues for secondary causes and motivation to lose weight	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.7	Perform, document and demonstrate a physical examination based on the history that includes general examination, measurement of abdominal obesity, signs of secondary causes and comorbidities	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.9	Order and interpret diagnostic tests based on the clinical diagnosis	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	including blood glucose, lipids, thyroid function tests etc.						
GM 14.10	Describe the indications and interpret the results of tests for secondary causes of obesity	S	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.11	Communicate and counsel patient on behavioural, dietary and lifestyle modifications	C	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.12	Demonstrate an understanding of patient's inability to adhere to lifestyle instructions and counsel them in a non - judgemental way	A/C	SH	Y	Bedside clinic, Skill Lab	Skills assessment	
GM 14.13	Describe and enumerate the indications, pharmacology, and side effects of pharmacotherapy for obesity and describe and enumerate indications and side effects bariatric surgery	K	K	Y	LGT,SGT	Written/Viva voce	
GM 14.14	Describe and enumerate and educate patients, health care workers and the public on measures to prevent obesity and promote a healthy lifestyle	K	K	Y	LGT,SGT	Written/Viva voce	
Topic 15: GI Bleeding	**Number of competencies: (18)**		**Number of competencies that require certification : (01)**				
GM 15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	K	KH	Y	LGT, SGT (SGT)	Application based questions / Viva voce	
GM 15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 15.3	Describe and discuss the patho-physiological effects of acute blood and volume loss	K	KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 15.4	Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors	S	SH	Y	Bedside clinic / Tutorial	Skills assessment - Short case/ OSCE/ Documentation in Journal	
GM 15.5	Perform, demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination	S	SH	Y	Bedside clinic / Tutorial	Skills assessment - Short case/OSCE Documentation in	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
						Journal	
GM 15.6	Distinguish between upper and lower gastrointestinal bleeding based on the clinical features	K	KH	Y	LGT, SGT	Application based questions Viva voce	
GM 15.7	Demonstrate the correct technique to perform an anal and rectal examination in a mannequin or equivalent	S	SH	Y	DOAP in skills lab	Skills assessment – OSCE on mannequin	
GM 15.8	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritize based on the most likely diagnosis	K	KH	Y	LGT, SGT/ Bedside clinic	Application based questions / Viva voce/ Short Case	
GM 15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H. Pylori test.	S	SH	Y	Bedside clinic, SGT Tutorial	Skill assessment OSCE/ viva Voce)	
GM 15.10	Enumerate the indications for endoscopy, colonoscopy and other Imagingcompetencies in the investigation of Upper GI bleeding	K	KH	Y	Bedside clinic, SGT Tutorial	Application based questions / Viva voce/	
GM 15.11	Develop, document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss	K	KH	Y	LGT, SGT/ Tutorial	Application based questions / Viva voce	
GM 15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion	K	KH	Y	LGT, SGT/ Tutorial	Application based questions / Viva voce	
GM 15.13	Observe cross matching and blood / blood component transfusion	S	SH	Y	Bedside clinic, Direct observation in elective/ emergency Situation	Skill assessment (OSCE/ viva Voce)	2
GM 15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of vasopressors used in the treatment of Upper GI bleed	K	KH	Y	LGT, SGT/ Tutorial	Application based questions / Viva voce	
GM 15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K, KH	Y	LGT, SGT	Application based questions / Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 15.16	Enumerate the indications for endoscopic interventions and Surgery in patient with GI Bleeding	K	K, KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 15.17	Determine appropriate level of specialist consultation as per clinical, hemodynamic status of the patient with GI bleed	K	K	Y	SGT	Application based questions / Viva voce	
GM 15.18	Counsel the family and patient with GI Bleeding on the diagnosis and therapeutic options in an empathetic non-judgmental manner	S C	SH	Y	Bedside clinic, DOAP Role play	Skills assessment - OSCE	
Topic 16: Diarrheal Disorders	**Number of competencies: (17)**				**Number of competencies that require certification : (NIL)**		
GM 16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non- infectious causes	K	K KH	Y	LGT, SGT	Application based questions / Viva voce	
GM 16.2	Describe and discuss the acute systemic consequences of diarrhea including its impact on fluid balance	K	K KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.3	Describe and discuss the chronic effects of diarrhea including malabsorption	K	K KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel, sexual history and other concomitant illnesses in a patient with Diarrhea	S	SH	Y	Bedside clinic, SGT	Skill assessment (Short case or OSCE)	
GM 16.5	Perform, document and demonstrate a physical examination based on the history that includes general examination, including an appropriate abdominal examination	S	SH	Y	Bedside clinic, DOAP session	Skill assessment (Short case / OSCE)	
GM 16.6	Distinguish between diarrhea and dysentery based on clinical features	K	KH	Y	Bedside clinic, SGT	Skill assessment (Short case / OSCE) Viva Voce	
GM 16.7	Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritize based on the most likely diagnosis	K	KH	Y	Bedside clinic, SGT	Skill assessment (Long/short case) Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination in a patient with acute/chronic diarrhea	S	SH	Y	Bedside clinic, SGT Tutorial	Skill assessment (OSCE/ viva Voce)	
GM 16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	S	SH	Y	DOAP	Skill assessment OSCE	
GM 16.10	Identify vibrio cholera in a hanging drop specimen	S	SH	Y	DOAP	Skill assessment OSCE	
GM 16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic Imaging and biopsy in the diagnosis of chronic diarrhea	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.15	Distinguish based on the clinical presentation Crohn's disease from Ulcerative Colitis	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including Immunotherapy in a patient with chronic diarrhea	K	KH	Y	LGT SGT	Application based questions / Viva voce	
GM 16.17	Describe and enumerate the indications for surgery in inflammatory bowel disease	K	KH	Y	LGT SGT	Application based questions / Viva voce	
Topic 17: Headache	**Number of competencies: (14)**		**Number of competencies that require certification : (01)**				
GM 17.1	Define and classify headache and describe the presenting features,	K	KH	Y	LGT	Application based	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	precipitating factors, aggravating and relieving factors of various kinds of headache				SGT	question/ Viva voice	
GM 17.2	Elicit and document and present an appropriate history including aura, precipitating aggravating and relieving factors, associated symptoms that help identify the cause of headaches	S	SH	Y	Bedside clinic SGT	Skill assessment OSCE	
GM 17.3	Classify migraine and describe the distinguishing features between classical and non-classical forms of migraine	K	KH	Y	LGT SGT	Application based question/ Viva voice	
GM 17.4	Demonstrate a detailed neurologic examination in a patient of headache and raised intracranial tension including signs of meningitis	S	SH	Y	Bedside clinic SGT	Long case/ Short case Skill assessment, OSCE	
GM 17.5	Generate, document and present a differential diagnosis based on clinical features in a patient with headache.	S	SH	Y	Bedside clinic SGT	Long case/ Short case Skill assessment, OSCE	
GM 17.6	Choose and interpret diagnostic testing including Imaging based on clinical diagnosis in a patient with headache	S	SH	Y	Bedside clinic SGT	Skill assessment OSCE Viva voce	
GM17.7	Enumerate the indication of lumbar puncture and describe the findings in CSF in different types of meningitis.	K	KH	Y	LGT SGT	Application based question/ Viva voice	
GM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP Skills lab	Skill assessment OSCE	
GM17.9	Interpret the CSF findings with various parameters in a given CSF fluid analysis report	S	SH	Y	Bedside clinic SGT	Skill assessment OSCE, Viva voce	2
GM17.10	Enumerate the indications for emergency care admission and describe Immediate supportive care in patients with headache	K	KH	Y	LGT SGT	Application based question/ Viva voice	
GM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine	K	KH	Y	LGT SGT	Application based question/ Viva voice	
GM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	K	KH	Y	LGT SGT	Application based question/ Viva voice	
GM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis	K	KH	Y	LGT SGT	Application based question/ Viva voice	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM17.14	Counsel patients with migraine and tension headache on lifestyle changes and need for prophylactic therapy	A/C	SH	Y	Bedside clinicDOAP	Skill assessment OSCE	
Topic 18 : Cerebrovascular Accident		**Number of competencies: (16)**		**Number of competencies that require certification : (01)**			
GM 18.1	Describe the functional and the vascular anatomy of the brain	K	KH	Y	LGT, SGT	Application based question /Viva voce	
GM 18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and acquired risk factors and pathogenesis of haemorrhagic and non-haemorrhagic stroke	K	KH	Y	LGT, SGT	Application based question /Viva voce	
GM 18.3	Elicit and document and present an appropriate history in a cerebrovascular patient including onset, progression, precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accidents	S	SH	Y	Bedside clinic, SGT	Long case /Short case Skills assessment OSCE	
GM 18.4	Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history in a stroke patient	S	SH	Y	Bedside clinic, DOAP	Long case /Short case Skills assessment OSCE	3
GM 18.5	Distinguish the lesion based on upper verses lower motor neuron, side, site and most probable nature of the lesion in a given patient with neurological symptoms/signs	K S	KH SH	Y	LGT Bedside clinic, DOAP	Application based question Long case /Short case, Skills assessment, OSCE	
GM 18.6	Elicit, document and present clinical examination of a stroke patient with speech disorder. Enumerate and describe the points for distinguishing the various disorders of speech based on site of lesion.	K S	KH SH	Y	Bedside clinic, DOAP	Application based question Long case /Short case, Skills assessment, OSCE	
GM18.7	Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in neurological diseases	K	KH	Y	LGT Bedside clinic, SGT	Application based question /Viva voice	
GM18.8	Choose and interpret the appropriate Imaging tests that will identify the anatomical site, type and etiology of the lesion in stroke patient	S	SH	Y	Bedside clinic, SGT	Skill assessment OSCE, Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM18.9	Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)	S	SH	Y	Bedside clinic, SGT	Skill assessment OSCE Viva voce	
GM 18.10	Describe the initial supportive management of a patient presenting with a cerebrovascular accident (CVA)	K	KH	Y	LGT SGT	Application based question /Viva voice	
GM 18.11	Describe management of non-haemorrhagic stroke including use of thrombolytic agents. Enumerate the indications and contraindications of thrombolytic agents in a stroke patient	K	KH	Y	LGT SGT	Application based question /Viva voice	
GM 18.12	Enumerate the indications and contraindications of antiplatelet agents in non-haemorrhagic stroke. Describe the role of antiplatelet agents in stroke patients.	K	KH	Y	LGT SGT	Application based question /Viva voice	
GM 18.13	Describe the management of a patient with haemorrhagic stroke.	K	KH	Y	LGT SGT	Application based question /Viva voice	
GM 18.14	Enumerate the indications for surgery in a haemorrhagic stroke	K	K	Y	LGT SGT	Written /Viva voice	
GM 18.15	Enumerate and describe the indications and modalities of multidisciplinary rehabilitation of patients with a CVA	K	KH	Y	LGT ,SGT, Bedside clinic	Application based question /Viva voice	
GM 18.16	Counsel regarding diagnosis, therapy, prognosis and outcome to patient with stroke and his/her family members in an empathetic manner	A/C	SH	Y	Bedside clinic DOAP	Skill assessment OSCE	
Topic 19: Movement Disorders		**Number of competencies: (09)**			**Number of competencies that require certification : (NIL)**		
GM 19.1	Describe the functional neuro-anatomy of the locomotor system of the brain	K	KH	Y	LGT, SGT	Application based question /Viva voce	
GM 19.2	Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factor	K	KH	Y	LGT, SGT	Application based question /Viva voce	
GM 19.3	Elicit and document and present an appropriate history including onset, progression precipitating, aggravating and relieving factors, associated symptoms that help identify the cause of the movement	S	SH	Y	Bedside clinic SGT	Short case Skill assessment OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	disorder						
GM 19.4	Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales	S	SH	Y	Bedside clinic SGT	Short case Skill assessment OSCE	
GM 19.5	Generate, document and present a differential diagnosis based on the history and physical examination in a patient with movement disorder	S	SH	Y	Bedside clinic SGT	Short case Skill assessment OSCE	
GM 19.6	Document and describe clinical diagnosis regarding the anatomical location, nature and cause of the lesion based on the clinical presentation and physical examination in a patient with movement disorder	S	SH	Y	Bedside clinic SGT	Short case Skill assessment OSCE	
GM 19.7	Choose and interpret diagnostic Imaging tests in the diagnosis of movement disorder	S	SH	Y	Bedside clinic SGT	Short case Skill assessment OSCE, Viva voce	
GM 19.8	Discuss and describe the pharmacology, their dose, side effects and interactions of the drugs used in the management of Parkinson's syndrome	K	KH	Y	LGT, SGT	Application based question /Viva voce	
GM 19. 9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 20: Seizure Disorders	**Number of competencies: (05)**		**Number of competencies that require certification : (NIL)**				
GM 20.1	Define and differentiate between seizures, convulsions and epilepsy.	K	K	Y	LGT SGT	Application based question, Viva voce	
GM 20.2	Enumerate the etiological classification of epilepsy. Discuss the pathophysiology, clinical evaluation and diagnosis of epilepsy including description of how to recognize different types of epilepsy. Enumerate and discuss the diagnostic tests in epilepsy.	K	KH	Y	LGT SGT	Application based question, Viva voce	
GM20.3	Discuss the management of epilepsy including various antiepileptic medications, their usage and drug interactions.	K	KH	Y	LGT SGT	Application based question, Viva voce	
GM 20.4	Counsel the patient and relatives regarding the safety precautions to be taken during and after an episode of seizure. Demonstrate	S/A/C	SH	Y	Bedside clinic DOAP	Skills assessment OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	patient education on lifestyle modifications including sleep patterns, stress management, alcohol or drug avoidance.				Role play		
GM 20.5	Discuss acute management of seizure episode	K	KH	Y	LGT, SGT	Application based question, Viva voce	
Topic 21: Envenomation	**Number of competencies: (09)**	**Number of competencies that require certification : (NIL)**					
GM21.1	Enumerate the local poisonous snakes and describe the distinguishing marks of each	K	K/ KH	Y	LGT SGT	MCQ/Written/ Viva voce	
GM21.2	Describe and demonstrate in a volunteer or a mannequin and educate (to other health care workers/patients) the correct initial management of patient with a snake bite in the field	K S	KH SH	Y	LGT SGT DOAP	Skill assessment OSCE Viva voce	
GM21.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite	K	KH	Y	LGT SGT	Application based question / Viva voce	
GM21.4	Elicit and document and present an appropriate history, the circumstances, time, kind of snake, evolution of symptoms in a patient with snake bite	S	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE Viva voce	
GM21.5	Perform a systematic examination, document and present a physical examination that includes general examination, local examination, appropriate cardiac and neurologic examination in a patient with snake bite	S	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE Viva voce	
GM21.6	Choose and interpret the appropriate diagnostic tests in patients with snake bite	S	SH	Y	Bedside clinic SGT	Skill assessment OSCE / Viva voce	
GM21.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti-snake venom	K	KH	Y	LGTSGT	Written/MCQ / Viva voce	
GM21.8	Describe the diagnosis, initial approach, stabilisation and therapy of scorpion envenomation	K	KH	Y	LGTSGT	Written/MCQ / Viva voce	
GM21.9	Describe the diagnosis, initial approach, stabilisation and therapy of bee sting and other envenomation	K	KH	N	LGTSGT	Written/ MCQ / Viva voce	
Topic 22: Poisoning	**Number of competencies: (13)**	**Number of competencies that require certification : (NIL)**					
GM22.1	Describe the initial approach to the stabilisation of the patient who presents with poisoning	K	KH	Y	LGT, SGT	Application based question, Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM22.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	K KH	Y	LGT, SGT	MCQ/Written, Viva voce	
GM 22.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	LGT, SGT	MCQ/Written, Viva voce	
GM 22.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	LGT, SGT	MCQ/ Written, Viva voce	
GM22.5	Identify and describe a pathophysiologic pattern or toxic syndrome (toxidrome) based on the observed findings	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM22.6	Describe and discuss the toxicology, clinical features, complications, prognosis and specific approach to management of common insecticide poisoning (Organophosphate and carbamate poisoning).	K	KH	Y	LGT, SGT	MCQ/Written, Viva voce	
GM22.7	Describe and discuss the clinical features, prognosis and management of aluminium phosphide and zinc phosphide poisoning.	K	KH	Y	LGT, SGT	MCQ/Written, Viva voce	
GM22.8	Describe and discuss the clinical features, prognosis and management of Methanol and Ethylene glycol poisoning	K	KH	Y	LGT, SGT	MCQ/Written, Viva voce	
GM22.9	Observe and describe the functions and role of a poison centre in suspected poisoning	K	KH	Y	Centre visit - SGT	Log book documentation Viva voce	
GM22.10	Describe the medico legal aspects of suspected suicidal or homicidal poisoning	K	KH	Y	LGT, SGT,	Written Viva voce	
GM22.11	Demonstrate the correct procedure to write a medico legal report on a suspected poisoning	S	SH	Y	DOAP SGT	Skill assessment OSCE	
GM22.12	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy	A/C	SH	Y	DOAP	Skill assessment OSCE	
GM22.13	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture	K	KH	Y	SGT	MCQ/Written Viva voce	
Topic 23: Mineral, Fluid Electrolyte and Acid base Disorder		**Number of competencies: (12)**			**Number of competencies that require certification : (NIL)**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 23.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.3	Describe the approach to the management of hypercalcemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.4	Enumerate the causes and describe the clinical features and the correct approach to the diagnosis and management for a patient with hyponatremia	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.5	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient t with hyponatremia	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.6	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hypokalemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
GM 23.7	Enumerate the causes and describe the clinical and laboratory features and the correct approach to the diagnosis and management of the patient with hyperkalemia	K	KH	Y	LGT, SGT	Written/ Viva voce/application based questions	
GM 23.8	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis	K	KH	Y	LGT, SGT	Written/ Viva voce/application based questions	
GM 23.9	Enumerate the causes and describe the clinical and laboratory features of metabolic alkalosis	K	KH	Y	LGT, SGT	Written/ Viva voce/MCQ	
GM 23.10	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis	K	KH	Y	LGT, SGT	Written/ Viva voce/MCQ	
GM 23.11	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis	K	KH	Y	LGT, SGT	Written/ Viva voce/MCQ	
GM 23.12	Identify the underlying acid-based disorder based on an ABG report and interpret it in the context of clinical situation	K	KH	Y	LGT, SGT	Written/ Viva voce/MCQ	
Topic: 24 Nutritional and Vitamin Deficiencies		**Number of competencies: (05)**			**Number of competencies that require certification : (NIL)**		
GM 24.1	Discuss and describe the methods of nutritional assessment in	K	KH	Y	LGT, SGT	Application	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	anadultandcalculationofcaloricrequirementsduringillnesses					based questions/Written/ Vivavoce	
GM 24.2	Discuss and describe the causes and consequences of proteincaloric malnutrition in the hospital	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM 24.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamindeficiencies	K	KH	Y	LGT, SGT	Application based questions/Written/ Vivavoce	
GM 24.4	Enumerate the indications for enteral and parenteral nutrition incriticallyill patients	K	KH	Y	LGT, SGT	Written/ Vivavoce	
GM 24.5	Counsel and communicate to patients in a simulated environment on an appropriate balanced diet	S	SH	Y	DOAP	Skill assessment/OSCE	
Topic 25: Geriatrics		**Number of competencies: (22)**			**Number of competencies that require certification : (NIL)**		
GM 25.1	Describe and discuss the epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM 25.2	Describe the multidimensional geriatric assessments that includes medical, psycho-social and functional components	K	K	Y	Bedside clinic, DOAP	Skill assessment /OSCE	
GM 25.3	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states	K	KH	Y	LGT, SGT	Written/viva voice	
GM 25.4	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM 25.5	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM 25.6	Describe the etiopathogenesis and clinical presentation of dementia in the elderly. Describe the acute care, stabilization, management and rehabilitation of dementia in elderly	K	KH	Y	LGT, SGT	Written/viva voice	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM25.7	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the Elderly	K	KH	N	LGT, SGT	Written/viva voice	
GM25.8	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.9	Describe and discuss the aetiopathogenesis clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.10	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.11	Describe and discuss the functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.12	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.13	Describe and discuss the etiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.14	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.15	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision abnormalities and visual loss in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.16	Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM25.17	Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.18	Describe the Impact of the demographic changes in ageing on the population	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.19	Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on Health	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.20	Enumerate and describe social interventions in the care of elderly including domiciliary services, rehabilitation facilities, old age homes and state interventions	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.21	Enumerate and describe ethical issues in the care of the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
GM25.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly	K	KH	Y	LGT, SGT	Written/viva voice	
Topic 26: Infectious Diseases		**Number of competencies: (35)**			**Number of competencies that require certification : (NIL)**		
GM 26.1	Describe and discuss the molecular mechanisms of microbial pathogenesis.	K	KH	Y	LGT SGT	Application based question, Viva voce	
GM26.2	Discuss the approach to a patient with an Infectious Disease.	K	KH	Y	LGT SGT	Application based question Viva voce	
GM 26.3	Elicit document and present a medical history that helps delineate the aetiology of infectious diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and Travel	S	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE	
GM 26.4	Perform a systematic examination that establishes the diagnosis and severity of presentation that includes: general skin, mucosal and lymph node examination, chest and abdominal examination (including examination of the liver and spleen)	S	SH	Y	Bedside clinic, DOAP	Skill assessment OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 26.5	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool	K	KH	Y	LGT Bedside clinic, DOAP	Skill assessment OSCE	
GM 26.6	Enumerate and describe the indications for use of newer techniques in the diagnosis of these infections	K	K KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM 26.7	Discuss the approach to the Acutely Ill Infected Febrile Patient	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM 26.8	Describe and discuss the common causes, clinical features and management of infections of the Skin, Muscles and Soft Tissues.	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM 26.9	Describe and discuss the common causes, clinical features and management of liver and other Visceral abscesses**.**	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 26.10	Describe and discuss the common causes, clinical features and management of acute infectious diarrheal diseases and bacterial food poisoning.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 26.11	Describe and discuss the common causes, clinical features and management of Urinary Tract Infections, Pyelonephritis, and Prostatitis.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 26.12	Describe and discuss the common causes, clinical features and management of encephalitis and meningitis.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 26.13	Describe and discuss the etiology, pathogenesis, clinical features and management of Clostridial infections like tetanus, botulism and gas gangrene.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM26.14	Describe and discuss the common causes, clinical features and management OF diseases caused by Gram-Negative Enteric Bacilli.	K	KH	N	LGT, SGT	Application based question / Viva voce	
GM26.15	Describe and discuss the etiopathogenesis, clinical features, complications and management of Helicobacter pylori Infections.	K	KH	Y	LGT, SGT	Application based question / Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM26.16	Describe and discuss the clinical features, complications and management OF infections due to Pseudomonas and Burkholderia Species.	K	KH	N	LGT, SGT	MCQ/Written / Viva voce	
GM26.17	Describe and discuss the etiopathogenesis, clinical features, complications and management of enteric fever.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM26.18	Describe and discuss the common causes, etiopathogenesis, clinical features and management of bacterial zoonotic diseases like Leptospirosis, Brucellosis, Plague and Anthrax.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM26.19	Describe and discuss the pathogenesis, clinical features and management of common diseases caused by Actinomycosis and Nocardia.	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.20	Describe and discuss the pathogenesis, clinical features and management of Rickettsial diseases especially of typhus group (Scrub typhus, epidemic typhus and endemic typhus).	K	KH	N	LGT, SGT	MCQ/Written / Viva voce	
GM26.21	Describe and discuss the etiopathogenesis, clinical features, complications and management of Herpes Simplex Virus Infections.	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.22	Describe and discuss the etiopathogenesis, clinical features, complications and management of Varicella-Zoster Virus Infections	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.23	Describe and discuss the etiopathogenesis, clinical features, complications and management of Common Viral Respiratory Infections, Including COVID-19, SARS, Influenza.	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.24	Describe and discuss the etiopathogenesis, clinical features, management and prevention of Rabies.	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.25	Describe and discuss the etiopathogenesis, clinical features, complications and management of Dengue.	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM26.26	Describe and discuss the etiopathogenesis, clinical features and management of candidiasis.	K	KH	N	LGT, SGT	MCQ/Written / Viva voce	
GM26.27	Describe and discuss the etiopathogenesis, clinical features, and management of Aspergillosis	K	KH	N	LGT, SGT	MCQ/Written / Viva voce	
GM26.28	Describe and discuss the etiopathogenesis, clinical features, complications and management of Amebiasis.	K	KH	Y	LGT, SGT	Application based question	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
						/ Viva voce	
GM26.29	Describe and discuss the etiopathogenesis, clinical features, complications and management of Malaria	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM26.30	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs.	K	KH	Y	SGT	Sill assessment	
GM26.31	Describe and discuss the etiopathogenesis, clinical features and management of Leishmaniasis.	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 26.32	Describe and discuss the etiopathogenesis, clinical features and management of Filarial disease.	K	KH	Y	LGT, SGT	MCQ/Written / Viva voce	
GM26.33	Describe and discuss the etiopathogenesis, clinical features, complications and management of Cysticercosis.	K	KH	N	LGT, SGT	MCQ/Written / Viva voce	
GM26.34	Communicate to the patient and family the diagnosis and treatment of identified infection	C	SH	Y	Bedside clinic DOAP	Skill assessment OSCE	
GM26.35	Counsel the patient and family on prevention of various infections due to environmental issues	C	SH	Y	Bedside clinic DOAP	Skill assessment OSCE	
Topic 27: Tuberculosis		**Number of competencies: (15)**			**Number of competencies that require certification : (01)**		
GM 27.1	Describe and discuss the epidemiology of tuberculosis and its impact on the work, life and economy of India	K	KH	Y	LGT, SGT	Application based question, Viva voce	
GM 27.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS)	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 27.3	Discuss and describe the impact of co-infection with HIV and other co-morbid conditions such as diabetes on the natural history of tuberculosis	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 27.4	Describe the epidemiology, the predisposing factors, microbial and therapeutic factors that determine resistance to anti-tubercular drugs	K	KH	Y	LGT, SGT	Application based question / Viva voce	
GM 27.5	Elicit, document and present an appropriate medical history that includes risk factor, contacts, symptoms including cough, fever,	S	SH	Y	Bed side clinic, DOAP session	Short/long case , Skill assessment -	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	anorexia, weight loss, hemoptysis and symptoms of extra-pulmonary manifestations					OSCE	
GM 27.6	Demonstrate and perform a systematic examination that establishes the diagnosis based on the clinical presentation that includes a a) general examination, b) examination of the chest and lung including loss of volume, mediastinal shift, percussion and auscultation of lung sounds and added sounds c) examination of the lymphatic system and d) relevant CNS examination	S	SH	Y	Bed side clinic, DOAP session	Short/long case Skill assessment – OSCE	
GM 27.7	Interpret a PPD (Mantoux Test) and describe and discuss the indications and pitfalls of the test	K	KH	Y	Bedside clinic, SGT	MCQ/Written Viva voce	
GM 27.8	Generate a differential diagnosis based on the clinical history and evolution of the disease that prioritizes the most likely diagnosis in patient with history/ examination findings suggestive of Tuberculosis	S	SH	Y	Bedside clinic, Small group discussion	Long case /short case, Skill assessment, OSCE	
GM 27.9	Order and interpret diagnostic tests based on the clinical presentation in patient with history/ examination findings suggestive of Tuberculosis including: CBC, Chest X ray PA view, Mantoux Test, sputum smear, culture and sensitivity, pleural fluid examination and culture, HIV testing	K S	KH SH	Y	Bedside clinic, DOAP session	Long case /short case Skill assessment – OSCE, Viva voce	
GM 27.10	Interpret a sputum gram stain and AFB with antibiotic sensitivity test from a given report	S	SH	Y	DOAP Tutorial	Skill assessment OSCE	
GM 27.11	Enumerate and describe the indications for tests including: serology, special cultures, Polymerase Chain Reaction and anti-tubercular drug sensitivity testing	K	KH	Y	SGT, LGT	Short note/ Viva voce	
GM 27.12	Describe and discuss the origin, indications, technique of administration, efficacy and complications of the BCG vaccine	K	KH	Y	LGT, SGT discussion	Short note/ Viva Voce	
GM 27.13	Describe and discuss the pharmacology of various anti-tuberculous agents, their indications, contraindications, interactions and adverse reactions	K	KH	Y	LGT, SGT discussion	Short note/ Viva voce	
GM 27.14	Prescribe an appropriate anti-tuberculosis Regimen based on the location of disease, smear positivity and negativity and comorbidities based on current national guidelines including	K S	KH SH	Y	LGT Bedside clinic, SGT,	Application based question Skill assessment-	2

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
	directly observed tuberculosis therapy (DOTS)					OSCE, Viva voce	
GM 27.15	Describe the appropriate precautions, screening, testing and indications for chemoprophylaxis for contacts and exposed health care workers	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 27.16	Define criteria for the cure of Tuberculosis; describe and recognize the features of drug-resistant tuberculosis, prevention and therapeutic regimens	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 27.17	Educate health care workers on National Program of Tuberculosis and administering and monitoring the DOTS program	K C/S	KH SH	Y	DOAP	Skill assessment OSCE Viva voce	
GM 27.18	Communicate with patients and family in an empathetic manner about the diagnosis and therapy of tuberculosis.	S	SH	Y	Bedside clinic DOAP	Skill assessment OSCE	
Topic 28: Obstructive Airway Diseases		**Number of competencies: (26)**		**Number of competencies that require certification : (01)**			
GM 28.1	Define and classify obstructive airway disease	K	K	Y	LGT, SGT	MCQs/Written/ Viva Voce	
GM 28.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 28.3	Enumerate and describe the causes of acute episodes in patients with obstructive airway disease	K	KH	Y	LGT, SGT	MCQ/ Application based question/ Viva voce	
GM 28.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 28.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	K	KH	N	LGT, SGT	Application based question/ Viva voce	
GM 28.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 28.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease	K	KH	Y	LGT, SGT	Application based question/ Viva voce	
GM 28.8	Elicit document and present a medical history that will differentiate the aetiologies of obstructive airway disease, severity and precipitants	S	SH	Y	Bed side clinic, DOAP	Long case/ short case Skill assessment, OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 28.9	Perform a systematic examination that establishes the diagnosis and severity that includes measurement of respiratory rate, level of respiratory distress, effort tolerance, breath sounds, added sounds, identification of signs of consolidation, pleural effusion and pneumothorax	S	SH	Y	Bed side clinic, DOAP	Long case/ short case Skill assessment OSCE	
GM 28.10	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	S	SH	Y	Bed side clinic, DOAP session	Long case/ short case, Skill assessment OSCE	
GM 28.11	Describe, discuss and interpret pulmonary function tests	K S	KH SH	Y	Bed side clinic, DOAP session	MCQ/Written Skill assessment OSCE	2
GM 28.12	Perform and interpret peak expiratory flow rate	S	P	Y	Bed side clinic, DOAP session	Documentation in logbook Skill assessment OSCE	
GM 28.13	Describe the appropriate diagnostic work up based on the presumed aetiology in patient with Obstructive Airway Disease	S	SH	Y	Bed side clinic, DOAP session	Long case/ short case, Skill assessment Viva voce, OSCE	
GM 28.14	Enumerate the indications for and interpret the results of : Pulse Oximetry, ABG, Chest Radiograph	K	KH	Y	Bed side clinic, SGT DOAP Session	MCQ/ Written Skill assessment Viva voce OSCE	
GM 28.15	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilizers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy	K	KH	Y	LGT, SGT	MCQ/ Written Viva voce	
GM 28.16	Describe and discuss the indications for vaccinations in OAD	K	KH	Y	LGT, SGT	MCQ/ Written Viva voce	
GM 28.17	Develop a therapeutic plan including use of bronchodilators and inhaled corticosteroids	K S	KH SH	Y	Bed side clinic, SGT DOAP Session	MCQ/ Written Skill assessment Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
						OSCE	
GM 28.18	Develop a management plan for acute exacerbations including bronchodilators, systemic steroids, Antimicrobial therapy	K S	KH SH	Y	Bed side clinic, SGT DOAP Session	MCQ/ Written Skill assessment Viva voce OSCE	
GM 28.19	Describe and discuss the principles and use of oxygen therapy in the hospital and at home	K	KH	Y	LGT, SGT	MCQ/ Written Viva voce	
GM 28.20	Describe discuss and counsel patients appropriately on smoking cessation	K C	KH SH	Y	DOAP Role play	Viva voce Skills assessment OSCE	
GM 28.21	Demonstrate and counsel patient on the correct use of inhalers	S C	SH	Y	DOAP Role play	Skill assessment OSCE	
GM 28.22	Communicate diagnosis, treatment plan and subsequent follow up plan to patients	S C	SH	Y	DOAP Role play	Skill assessment OSCE	
GM 28.23	Discuss and describe the impact of OAD on patient's quality of life, wellbeing, work, family, society and workplace	K	KH	Y	LGT, SGT discussion	Application based question/ Viva voce	
GM 28.24	Discuss and describe preventive measures to reduce OAD in workplaces	K	KH	Y	LGT, SGT discussion	Application based question/ Viva voce	
GM 28.25	Demonstrate an understanding of patient's inability to change working, living and environmental factors that influence progression of airway disease	A C	SH	Y	SGT, Bedside clinics Role play	Observation by faculty OSCE	
GM 28.26	Demonstrate an understanding for the difficulties faced by patients during smoking cessation	A C	SH	Y	SGT, Bedside clinics Role play	Observation by faculty OSCE	
Topic 29: The role of the physician in the community		**Number of competencies: (26)**			**Number of competencies that require certification : (NIL)**		
GM 29.1	Describe and discuss the role of non-maleficence as a guiding principle in patient care	K	KH	Y	Bedside clinic, SGT	Application based questions/ Viva Voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 29.2	Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care	K	KH	Y	Bedside clinic, SGT	Application based questions/ Viva Voce	
GM 29.3	Describe and discuss the role of beneficence of a guiding principle in patient care	K	KH	Y	Bedside clinic, SGT	Application based questions/ Viva Voce	
GM 29.4	Identify, discuss and defend medico-legal, sociocultural, economic and ethical issues as it pertains to rights, equity and justice in access to health care	K	KH	Y	Bedside clinic, SGT	Application based questions/ Viva Voce	
GM 29.5	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as it pertains to decision making in health care including advanced directives and surrogate decision making	K	KH	Y	SGT	Application based questions/ Viva Voce	
GM 29.6	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as it pertains to decision making in emergency care including situations where patients do not have the capability or capacity to give consent	K	KH	Y	Bedside clinic, SGT	Application based questions/ Viva Voce	
GM 29.7	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as it pertains to research in study participants	K	KH	Y	SGT	Application based questions/ Viva Voce	
GM 29.8	Demonstrate ability to work in a team of peers and superiors	S	SH	Y	Bedside clinic, SGT – Role Play	Skill assessment (Formative)	
GM 29.9	Demonstrate respect to patient privacy	S	SH	Y	Bedside clinic, SGT – Role play	Skill assessment OSCE	
GM 29.10	Demonstrate ability to maintain confidentiality in patient care	S	SH	Y	Bedside clinic, SGT – Role play	Skill assessment OSCE	
GM 29.11	Demonstrate a commitment to continued learning	S	SH	Y	Bedside clinic, SGT Reflections writing	Skill assessment (Formative)/ Viva voce	
GM 29.12	Demonstrate responsibility and work ethics while working in the health care team	S	SH	Y	Bedside clinic, DOAP, Role play	Skill assessment Formative)/ Viva voce	
GM 29.13	Demonstrate ability to maintain required documentation in health care (including correct use of medical records)	S	SH	Y	SGT	Skill assessment Formative) / Viva voce	
GM 29.14	Demonstrate personal grooming that is adequate and appropriate for health care responsibilities	S	SH	Y	SGT Role play	Skill assessment Formative)	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
GM 29.15	Demonstrate adequate knowledge and use of information technology that permits appropriate patient care and continued learning	S	SH	Y	SGT	Skill assessment Formative)/ Viva voce	
GM 29.16	Demonstrate awareness of limitations and seeks help and consultations appropriately	S	SH	Y	Bedside clinic, DOAP Role play	Skill assessment Formative/ Viva voce	
GM 29.17	Demonstrate ability to balance personal and professional priorities	S	SH	N	SGT Role plays Role modelling	Skill assessment Formative / Viva voce	
GM 29.18	Demonstrate ability to manage time appropriately	S	SH	Y	SGT Role plays	Skill assessment Formative / Viva voce	
GM 29.19	Demonstrate ability to form and function in appropriate professional networks	S	SH	N	SGT	Skill assessment Formative/ Viva voce	
GM 29.20	Demonstrate ability to pursue and seek career advancement	S	SH	N	SGT	Skill assessment Formative / Viva voce	
GM 29.21	Demonstrate ability to follow risk management and medical error reduction practices where appropriate	S	SH	N	SGT Role play	Skill assessment Formative / Viva voce	
GM 29.22	Demonstrate ability to work in a mentoring relationship with junior colleagues	S	SH	N	SGT	Skill assessment Formative / Viva voce	
GM 29.23	Demonstrate commitment to learning and scholarship	S	SH	N	SGT	Skill assessment Formative / Viva voce	
GM 29.24	Identify, discuss and defend medico-legal, socio-cultural professional and ethical issues in dealing with Impaired physicians	K	KH	N	SGT	Application based questions/ Viva Voce	
GM 29.25	Demonstrate altruism	S	SH	Y	SGT Role play Role modelling	Skill assessment, OSCE	
GM 29.26	Administer informed consent and appropriately address patient queries to a patient being enrolled in a research protocol in a simulated environment	S	SH	Y	Bedside clinic, DOAP Role play	Skill assessment OSCE	

PEDIATRICS (CODE: PE)

Number	COMPETENCY Thestudentshouldbeableto	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	SuggestedTeaching Learning methods	SuggestedAssessment methods	Number required tocertify P
PEDIATRICS(Topics:35, Competencies: 406)							
Topic 1: Normal Growth and Development Number of competencies: (03) Number of competencies that require certification: (NIL)							
PE1.1	Define the terminologies Growth and development and describe the factors affecting normal growth.	K	KH	Y	LGT,SGT	Written/Vivavoce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P
PE1.2	Describe the methods of assessment of growth including use of WHO and Indian national standards. Enumerate the parameters used for assessment of physical growth in infants, children and adolescents and Perform Anthropometric measurements, document in growth-charts and interpret.	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE1.3	Define development and Describe the normal developmental milestones with respect to motor, behaviour, social, adaptive and language. Discuss the factors affecting development and describe the assessment methods of development.	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic2: Common problems related to Growth Number of competencies:(03) Number of competencies that require certification: (NIL)							
PE2.1	Discusstheetio-pathogenesis, clinical features, assessment and management of a child who fails to thrive	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE2.2	Counselling the parent of a child with failure to thrive.	A/C	SH	Y	OSPE	DocumentinLogbook	

PE2.3	Discuss the etio-pathogenesis, clinical features and managementof a child with short stature. Assessmentofachildwithshortstature.	K	KH	Y	LGT,SGT	Written/Vivavoce	
	Topic 3: Common problems related to Development-1 (Developmental delay, Cerebral palsy)	**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
PE3.1	Define developmental delay. Describe the causes of developmental delay and disability including intellectual disability in children	K	K	Y	LGT,SGT	Written/Vivavoce	
PE3.2	Explain the approach to a child with developmental delay	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
PE3.3	Counsel a parent ofachild with developmental delay	S+C	SH	Y	DOAP	DocumentinLogBook	
PE3.4	Visit a Child Developmental Unit and observe its functioning	S	KH	Y	LGT, SGT	LogbookEntry	
	Topic 4: Common problems related to Development-2 (Autism, ADHD)	**Number of competencies: (02)**			**Number of competencies that require certification: (NIL)**		
PE4.1	Describe the etiology, clinical features, diagnosis and management of a child with Attention Deficit Hyperactivity Disorder (ADHD)	K	K	N	LGT,SGT	Written	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**SuggestedTeaching Learning methods**	**SuggestedAssessment methods**	**Number required tocertify P**
PE4.2	Describe the etiology, clinical features, diagnosis and management of a child with Autism	K	K	N	LGT,SGT	Written	
	Topic 5: Common problems related to behavior	**Number of competencies: (04)**			**Number of competencies that require certification: (NIL)**		
PE5.1	Describe the clinical features, diagnosis and management of Feeding problems	K	K	N	LGT,SGT	Written	
PE5.2	Describe the clinical features, diagnosis and management of Breath Holding spells	K	K	N	LGT,SGT	Written/Vivavoce	
PE5.3	Describe the clinical features, diagnosis and management of temper tantrums and Pica	K	K	N	LGT,SGT	Written/Vivavoce	
PE5.4	Explain the etiology, clinical features and management of Enuresis	K	K	N	LGT,SGT	Written/Vivavoce	
	Topic 6: Adolescent Health & common problems related to Adolescent Health	**Number of competencies: (12)**			**Number of competencies that require certification: (NIL)**		
PE6.1	Define Adolescence and Describe the stages of adolescence	K	K	Y	LGT,SGT	Written/Vivavoce	

PE6.2	Describe the physical, physiological and psychologicalchanges during adolescence (Puberty)	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE6.3	Describe the general health problems during adolescence	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE6.4	Describe adolescent sexuality and common problems related to it	K	KH	N	LGT,SGT	Written/Vivavoce	
PE6.5	Describe the common Adolescent eating disorders (Anorexia Nervosa, Bulimia)	K	KH	N	LGT,SGT	Written/Vivavoce	
PE6.6	Describe the commonmental health problems during adolescence	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE6.7	Respecting patient privacy and maintaining confidentiality while dealing with adolescence	A	SH	Y	Bedside clinics	Document in log book	
PE6.8	Perform routine Adolescent Health check up including eliciting history, performing examination including SMR (Sex Maturity Rating),growth assessments(usingGrowthcharts)andsystemic exam including thyroid and Breast exam and the HEADSS screening	S	SH	Y	Bedside clinics	Skillsstation	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE6.9	Explain the objectives and functions of AFHS (Adolescent Friendly Health Services) and the referral criteria	K	K	N	LGT,SGT	Written/Viva voce	
PE6.10	Visit to the Adolescent Clinic	S	KH	Y	DOAP	Document in Log Book	
PE6.11	Enumerate the importance of obesity and other NCD in adolescents	K	K	Y	LGT,SGT	Written/Viva voce	
PE6.12	Enumerate the prevalence and importance of recognition of sexual abuse and drug abuse in adolescents and children	K	K	N	LGT,SGT	Written/Viva voce	
Topic 7: To promote and support optimal Breast feeding for Infants		**Number of competencies: (08)**			**Number of competencies that require certification: (01)**		
PE7.1	Awareness on the cultural beliefs and practices of breastfeeding and explain physiology of lactation	K	K	N	LGT,SGT	Viva	
PE7.2	Describe the composition and types of breast milk and discuss the differences between cow's milk and Human milk	K	KH	Y	LGT,debate	Written/Vivavoce	
PE7.3	Describe the advantages of breast milk	K	KH	Y	LGT,SGT	Written/Vivavoce	

PE7.4	Observe the correct technique of breastfeeding and distinguish right from wrong techniques	S	P	Y	Bedside clinics, Skills lab	Skill assessment	3
PE7.5	Enumerate the baby friendly hospital initiatives	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE7.6	Describe the principles of IYCF (Infant and Young Child Feeding)	K	KH	N	SGT	Viva voce	
PE7.7	Participate in World Breastfeeding Week (WBW) celebration at your institute	K,S,C	SH,P	N	Outreach activities		
PE7.8	Describe the structure and functioning of human milk bank and visit the nearest human bilk bank	K,C	KH	N	SGT	Viva voce	
	Topic 8: Complementary Feeding	**Number of competencies : (05)**			**Number of competencies that require certification: (NIL)**		
PE8.1	Define the term Complementary Feeding	K	K	Y	LGT,SGT	Written/Vivavoce	
PE8.2	Explain the principles, the initiation, attributes, frequency, techniques and hygiene related to Complementary Feeding.	K	KH	Y	LGT,SGT	Written/Vivavoce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE8.3	Enumeratethecommoncomplementaryfoods	K	K	Y	LGT,SGT	Written/Vivavoce	
PE8.4	ElicithistoryontheComplementaryFeedinghabits	S	SH	Y	Bedside clinics,Skills lab	Skill assessment	
PE8.5	Counselandeducatemothersonthebestpracticesin Complementary Feeding	A/C	SH	Y	DOAP	DocumentinLogBook	
	Topic 9: Normal nutrition, assessment and monitoring	**Number of competencies : (07)**			**Number of competencies that require certification: (NIL)**		
PE9.1	Describe age-related nutritional needs of infants, children and adolescents including micronutrients and vitamins	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE9.2	Describe the tools and methods for assessment and classification of nutritional status of infants, children and adolescents	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE9.3	Explain the Calorific value of common Indian foods	K	K	Y	LGT,SGT	Written/Vivavoce	
PE9.4	Elicit document and present an appropriate nutritional history and perform a dietary recall	S	SH	Y	Bedside clinic, Skills lab	Skill assessment	

PE9.5	Calculate the age-related calorie requirement in Health and Disease, and identify gap	S	SH	Y	Bedside clinics,SGT	Skill assessment	
PE9.6	Assess and classify the nutrition status of infants, children and adolescents and recognize deviations	S	SH	Y	Bedside clinic,SGT	Skill assessment	
PE9.7	Plan an appropriate diet in health and isease	S	SH	N	Bedside clinic,SGT	Documentinlogbook	
	Topic 10: Provide nutritional support, assessment and monitoring for common nutritional problems		**Number of competencies: (06)**		**Number of competencies that require certification: (NIL)**		
PE10.1	Define and describe the etio-pathogenesis, classify includingWHO classification, clinical features, complication and management of Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM)	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE10.2	OutlinetheclinicalapproachtoachildwithSAMandMAM	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE10.3	Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention	S	SH	Y	Bedside clinics, Skills lab	Skillstation	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE10.4	Counsel parents of children with SAM and MAM	S	SH	Y	Bedside clinic, Skills Station	Document in Logbook	
PE10.5	Enumerate the role of locally prepared therapeutic diets and ready to use therapeutic diets	K	K	N	LGT,SGT	Written/Vivavoce	
PE10.6	Explain the Adolescent Nutrition and common nutritional problems	K	KH	Y	LGT, SGT	Written/ Vivavoce	
	Topic 11: Obesity in children	**Number of competencies: (04)**			**Number of competencies that require certification: (01)**		
PE11.1	Describe the etiology, clinical features and management of obesity in children	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE11.2	Describe the risk approach for obesity and discuss the prevention strategies	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE11.3	Assessment of a child with obesity with regard to eliciting history including physical activity, charting and dietary recall	S	SH	Y	Bedside clinics, Standardizedpatients	Documentinlog book	

PE11.4	Examination including calculation of BMI, measurement of waist-hip ratio, identifying external markers like acanthosis, striae, pseudogynaecomastia etc	S	SH	Y	Bedside clinics, Standardizedpatients, Videos	SkillsStation	
	Topic 12: Micronutrients in Health and disease-1 (Vitamins ADEK, B Complex and C)	**Number of competencies: (08)**			**Number of competencies that require certification: (NIL)**		
PE12.1	Describe the RDA, dietary sources of Vitamin A, its metabolism.	K	K	Y	LGT,SGT	Written/Vivavoce	
PE12.2	Describe the causes, clinical features, classification, diagnosis and management of Deficiency/excess of Vitamin A	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE12.3	Describe the causes, clinical features, diagnosis and management of Deficiency/excess of Vitamin D (Rickets and Hypervitaminosis D)	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE12.4	Describe the causes, clinical features, diagnosis and management of deficiencyof Vitamin E	K	KH	N	LGT,SGT	Written/Vivavoce	
PE12.5	Describe the RDA, dietary sources of Vitamin K and their role in health and disease	K	K	N	LGT,SGT	Written/Vivavoce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE12.6	Describe the causes, clinical features, diagnosis, management and prevention of deficiency of Vitamin K	K	KH	N	LGT,SGT	Written/Viva voce	
PE12.7	Describe the causes, clinical features, diagnosis and management of deficiency of B complex Vitamins	K	KH	Y	LGT,SGT	Written/Viva voce	
PE12.8	Describe the RDA, dietary sources of Vitamin C and their role in Health and disease, clinical features of deficiency and management	K	KH	N	LGT,SGT	Written/Viva voce	
	Topic 13: Micronutrients in Health and disease -2: Iron, Iodine, Calcium, Magnesium	**Number of competencies: (04)**			**Number of competencies that require certification: (NIL)**		
PE13.1	Describe the RDA, dietary sources of Iron and their role in health and disease, clinical features of iron deficiency, and management	K	K	Y	LGT,SGT	Written/Viva voce	
PE13.2	Describe the National anaemia control program and its recommendations	K	K	Y	LGT,SGT	Written/Viva voce	

PE13.3	Describe the RDA, dietary sources of Iodine and their role in Health and disease, deficiency, and Goiter control program	K	K	Y	LGT,SGT	Written/Viva voce	
PE13.4	Describe the RDA, dietary sources of Calcium and Magnesium and their role in health and disease, clinical features and management of deficiency states.	K	K	Y	LGT,SGT	Written/Viva voce	
	Topic 14: Poisoning	**Number of competencies: (03)**			**Number of competencies that require certification (NIL)**		
PE14.1	Explain the risk factors, clinical features, diagnosis and management of Kerosene ingestion	K	KH	N	LGT,SGT	Written/Viva voce	
PE14.2	Explain the risk factors, clinical features, diagnosis and management of Organophosphorus poisoning	K	KH	N	LGT,SGT	Written/Viva voce	
PE14.3	Describe the risk factors, clinical features, diagnosis and management of paracetamol poisoning	K	KH	N	LGT,SGT	Written/Vivavoce	
	Topic 15: Fluid and electrolyte balance	**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
PE15.1	Describe the fluid and electrolyte requirement in health and disease	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE15.2	Interpret electrolyte report and describe the management of sodium and potassium imbalance	S	SH	Y	Bedside clinics,SGT	Skill assessment	
PE15.3	Demonstrate the steps of inserting an IV cannula in a model	S	SH	Y	Skills Lab	mannequin	
PE15.4	Demonstrate the steps of inserting an interosseous line in a mannequin	S	SH	Y	Skills Lab	mannequin	
Topic 16: Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Guideline		**Number of competencies:(06)**			**Number of competencies that require certification: (NIL)**		
PE16.1	Explain the components of Integrated Management of Neonatal and Childhood Illnesses (IMNCI)guidelines and method of Risk stratification	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE16.2	Assess children<2months using IMNCI Guidelines	S	SH	Y	DOAP	Document in log Book	
PE16.3	Assess children 2 months to 5 years using IMNCI guidelines and Stratify Risk	S	SH	Y	DOAP	Document in log Book	

PE16.4	Identify children with undernutrition as per IMNCI criteria and plan referral	S	SH	Y	DOAP	Document in log book	
PE16.5	Identify and stratify risk in a sick neonate using IMNCI guidelines	S	SH	Y	DOAP	Document in Log Book	
PE16.6	Apply the IMNCI guidelines in risk stratification of children with diarrheal dehydration and refer	S	SH	Y	Bedside clinics, Skillslab	Document in Log book	
Topic 17: The National Health programs, NHM		**Number of competencies:(01)**			**Number of competencies that require certification: (NIL)**		
PE17.1	Describe the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RCH, RMNCH A+, RBSK, RKSK, JSSK mission Indradhanush and ICDS	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 18: National Programs, RCH - Universal Immunizations program		**Number of competencies: (14)**			**Number of competencies that require certification: (01)**		
PE18.1	Explain the components of the Universal Immunization Program and the National Immunization Program	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE18.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	LGT,SGT	Written/Vivavoce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE18.3	Describe Vaccine with regards to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and Contraindications	K	KH	Y	LGT,SGT	Written/Viva voce	
PE18.4	Define cold-chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	LGT,SGT	Written/Viva voce	
PE18.5	Describe immunization in special situations – HIV positive children, immunodeficiency, pre-term, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travelers	K	KH	Y	LGT,SGT	Written/Viva voce	
PE18.6	Assess patient for fitness for immunization and prescribe an age-appropriate immunization schedule	S	P	Y	Out Patient clinics Skills lab	Skill assessment	5

PE18.7	Educate and counsel apparent for immunization	A/C	SH	Y	DOAP	Document in Log Book	
PE18.8	Describe the components of safe vaccine practice – Patient education/ counselling; adverse events following immunization, safe injection practices, documentation and Medico-legal implications	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE18.9	Observe the handling and storing of vaccines	S	SH	Y	DOAP	Written/Vivavoce	
PE18.10	Document Immunization in an immunization record	S	SH	Y	Out Patient clinics, Skills lab	Skill assessment	
PE18.11	Observe the administration of UIP vaccines	S	SH	Y	DOAP	Document in Log Book	
PE18.12	Demonstrate the correct administration of different vaccines ina mannequin	S	SH	Y	DOAP	Document in Log Book	
PE18.13	Explain the term implied consent in Immunization services	K	K	Y	SGT	Written/Viva voce	
PE18.14	Enumerate available newer vaccines and their indications including pentavalent pneumococcal, rotavirus, JE, Hepatitis A, Influenza, COVID, typhoid, IPV & HPV	K	K	N	LGT, SGT	Written/Viva voce	
Topic 19: Care of the Normal New born, and High risk New born		**Number of competencies: (17)**			**Number of competencies that require certification: (NIL)**		

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE19.1	Define the common neonatal nomenclatures including the classification new born and describe the characteristics of a Normal Term Neonate and High-Risk Neonates, Explain the care of a normal neonate	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.2	Perform Neonatal resuscitation on a manikin	S	SH	Y	DOAP	Log book entry of Performance	
PE19.3	Assessment of a normal neonate. Explain the follow up care for neonates including Breast Feeding, Temperature maintenance, immunization, importance of growth monitoring and red flags	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
PE19.4	Describe the etiology, clinical features and management of Birth asphyxia	K	KH	Y	LGT,SGT	Written/Viva voce	

PE19.5	Describe the etiology, clinical features and management of Respiratory distress in New-born including meconium aspiration and transient tachypnoea of newborn	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.6	Explain the etiology, clinical features and management of Birth injuries	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.7	Explain the etiology, clinical features and management of Hemorrhagic disease of Newborn	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.8	Describe the clinical characteristics, complications and management of Low birth weight (preterm and Small for gestation)	K	KH	Y	LGT,SGT	Written/Vivavoce	
PE19.9	Describe the temperature regulation in neonates, clinical features and management ofNeonatal Hypothermia	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.10	Describe the temperature regulation in neonates, clinical features and management of Neonatal Hypoglycemia	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.11	Explain the etiology, clinical features and management of Neonatal hypocalcemia	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.12	Describe the etiology, clinical features and management of Neonatal seizures	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE19.13	Explain the etiology, clinical features and management of Neonatal Sepsis	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.14	Describe the etiology, clinical features and management of Perinatal infections	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.15	Describe the etiology, clinical features and management of Neonatal hyperbilirubinemia	K	KH	Y	LGT,SGT	Written/Viva voce	
PE19.16	Identify clinical presentations of common surgical conditions in the newborn including TEF, esophageal atresia, anal atresia, cleft lip and palate, congenital diaphragmatic hernia and causes of acute abdomen	K	KH	Y	LGT,SGT	Written/Viva voce	

PE19.17	Describe the riskfactors, clinical features, diagnosis and management of Oxygen toxicity	K	KH	N	LGT, SGT	Written/ Viva voce	
	Topic 20: Genito-Urinary system	**Number of competencies (09)**			**Number of competencies that require certification: (NIL)**		
PE20.1	Enumerate the etio-pathogenesis, clinical features, complications and management of Urinary Tract infection in children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.2	Enumerate the etio-pathogenesis, clinical features, complications and management of Acute Post-Streptococcal Glomerulonephritis in Children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.3	Describe the approach and referral criteria to a child with Proteinuria	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.4	Describe the approach and referral criteria to a child with Hematuria	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.5	Enumerate the etio-pathogenesis, clinical features, complications and management of Acute Renal Failure in children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.6	Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic Renal Failure in Children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.7	Enumerate the etio-pathogenesis, clinical features, complications and management of Wilms Tumor	K	KH	Y	LGT,SGT	Written/Viva voce	
PE20.8	Perform and interpret the common analytes in a Urine examination	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE20.9	InterpretreportofPlainXRayofKUB	S	SH	Y	Bedside clinics, Skills lab	Log book	
Topic 21: Approach to and recognition of a child with possible Rheumatologic problem		**Number of competencies: (050**			**Number of competencies that require certification:(NIL)**		
PE21.1	Enumerate the common Rheumatological problems in children. Discuss the clinical approach to recognition and referral of a child with Rheumatological problem	K	KH	Y	LGT,SGT	Written/Viva voce	
PE21.2	Describe the etiopathogenesis, diagnosis and management of Henoch Schoenlein Purpura.	K	K	N	LGT,SGT	Written/Viva voce	

PE21.3	Describe the etiopathogenesis, diagnosis and management of Kawasaki Disease	K	K	N	LGT,SGT	Written/Viva voce	
PE21.4	Describe the etiopathogenesis, diagnosis and management of SLE	K	K	N	LGT,SGT	Written/Viva voce	
PE21.5	Describe the etiopathogenesis, diagnosis and management of JIA	K	K	N	LGT,SGT	Written/Viva voce	
Topic 22: Cardiovascular system- Heart Diseases		**Number of competencies: (11)**			**Number of competencies that require certification:(NIL)**		
PE22.1	Describe the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases	K	KH	Y	LGT,SGT	Written/Viva voce	
PE22.2	Describe the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases	K	KH	Y	LGT,SGT	Written/Viva voce	
PE22.3	Explain the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE22.4	Explain the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE22.5	Describe the etio-pathogenesis, clinical features and management of Infective endocarditis in children	K	KH	Y	LGT,SGT	Written/Viva voce	
PE22.6	Describe the etiopathogenesis, grading, clinical features and management of hypertension in children	K	KH	Y	LGT,SGT	Short notes	
PE22.7	Record pulse, blood pressure, temperature and respiratory rate and interpret as per the age	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE22.8	Perform independently examination of the cardiovascular system– look for precordial bulge, pulsations in the precordium, JVP and its significance in children and infants, relevance of percussion in Pediatric examination, Auscultation and other system examination and document	S	SH	Y	Bedside clinics, Skills lab	Skill station	
PE22.9	Interpret a chest X-ray and recognize cardiomegaly	S	SH	Y	Bedside clinics, Skills lab	Log book entry	
PE22.10	Interpret Pediatric ECG	S	SH	Y	Bedside clinics, Skills lab	Log book entry	

PE22.11	Demonstrate empathy while dealing with children with cardiac diseases in every patient encounter	A	SH	Y	SGT	Document in Log Book	
Topic 23: GIT and Hepatobiliary system		**Number of competencies: (21)**			**Number of competencies that require certification:(02)**		
PE 23.1	Define vomiting, discuss causes, evaluation & management of vomiting in children	K	KH	y	LGT, SGT	Written/ Viva voce	
PE23.2	Define constipation discuss causes, evaluation & management of constipation in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE23.3	Discuss the causes, evaluation and management of abdominal pain in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE23.4	Define diarrhea (acute diarrhea, chronic diarrhea, persistent diarrhea). Discuss etiology, risk factors, clinical features, complications, investigations and treatment (according to WHO guidelines) of acute gastroenteritis.	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE23.5	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE23.6	Discuss the physiological basis of ORT, types of ORS and the composition of various types of ORS. Discuss composition of fluids used in management of diarrhea. Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti-emetics in acute diarrheal diseases	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE23.7	Elicit history pertaining to diarrheal diseases. Assess for signs & symptoms of dehydration, shock, prerenal AKI, electrolyte disturbances, document and present.	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
PE23.8	Perform and interpret stool examination including Hanging Drop, Interpret RFT and electrolyte report In the context of diarrhea	S	SH	N	Bedside clinics, Skills	lab Log book	
PE23.9	Perform NG tube insertion in a manikin	S	P	Y	DOAP	Document in Log book	

PE23.10	Perform IV cannulation in a model	S	P	Y	DOAP	Document in Log book	
PE23.11	Perform Interosseous insertion model	S	P	Y	DOAP	Document in Log book	2
PE23.12	Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in Children and its causes including celiac disease	K	KH	N	LGT, SGT	Written/ Viva voce	2
PE23.13	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	LGT,SGT activity	Written/Viva voce	
PE23.14	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	LGT,SGT activity	Written/Viva voce	
PE23.15	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	LGT,SGT activity	Written/Viva voce	
PE23.16	Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children	K	KH	Y	LGT,SGT activity	Written/Viva voce	
PE23.17	Elicit, document and present the history related to diseases of Gastrointestinal system	S	SH	Y	Bedside clinics,Skills lab	Skills Station	
PE23.18	Identify external markers for GI and Liver disorders e.g. Jaundice, Pallor, Gynecomastia, Spider angioma, Palmar erythema, Ichthyosis, Caput medusa, Clubbing, failing to thrive, Vitamin A and D deficiency	S	SH	Y	Bedside clinics,Skills lab	Skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required to certify P**
PE23.19	Perform examination of the abdomen, demonstrate organomegaly, ascites etc.	S	SH	Y	Bedside clinics,Skills lab	Skill assessment	
PE23.20	Interpret Liver Function Tests, viral markers, ultra-sonogram report	S	SH	Y	Bedside clinics,Skills lab	Skill assessment	
PE23.21	Enumerate the indications for Upper GI endoscopy	K	K	N	SGT	Viva voce	
Topic: 24 Pediatric Emergencies – Common Pediatric Emergencies		**Number of competencies: (23)**			**Number of competencies that require certification:(10)**		
PE24.1	Describe the etio-pathogenesis, clinical approach and management of cardio-respiratory arrest in children	K	KH	Y	LGT, SGT	Written/ Viva voce	

PE24.2	Describe the etio-pathogenesis and management of respiratorydistressin children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.3	Describe the etio-pathogenesis, clinical approach and management of Shock in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.4	Describe the etio-pathogenesis, clinical approach and management of Status epilepticus	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.5	Describe theetio-pathogenesis, clinical approach and management of an unconscious child	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.6	Explain oxygen therapy, in Pediatric emergencies and modes of administration	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.7	Observe the various methods of administering Oxygen	S	KH	Y	Demonstration	Document in log book	
PE24.8	Assess airwayand breathing: recognise signs ofsevere respiratory distress. Check for cyanosis, severe chest in drawing, Grunting	S	P	Y	DOAP, Skills lab	Skills Assessment	3
PE24.9	Assess airway and breathing. Demonstrate the method of positioning of an infant & child to open airway in a Simulated environment	S	P	Y	DOAP, Skills Lab	Skills Assessment	3
PE24.10	Assess airway and breathing: administer oxygen using correct techniqueand appropriateflow rate	S	P	Y	DOAP, Skills Lab	Skills Assessment	3

Number	**COMPETENCY Thestudentshouldbeableto**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE24.11	Assess airway and breathing perform assisted ventilation by Bag and mask in a simulated environment	S	P	Y	DOAP, Skills lab	Skills Assessment	3
PE24.12	Check for signs of shock i.e. pulse, Blood pressure, CRT	S	P	Y	DOAP, Skills Lab	Skills Assessment	3
PE24.13	Secure an IV access in a simulated environment	S	P	Y	DOAP, Skills Lab	Skills Assessment	3

PE24.14	Choose the type offluidand calculate the fluid requirement in shock	S	P	Y	DOAP, SGTactivity	Skills Assessment	3
PE24.15	Assess level of consciousness & provide emergency treatment to achildwith convulsions/coma position an unconscious child. Position a child with suspected trauma. Administer IV/per rectal Diazepam for a convulsing child in a simulated environment.	S	P	Y	DOAP, Skills Lab	Skills Assessment	3
PE24.16	Assess for signs of severe dehydration	S	P	Y	Bedside clinics, Skills lab	Skill station	3
PE24.17	Monitoring and maintaining temperature: define hypothermia. Describe the clinical features, complications and management of Hypothermia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.18	Describe the advantages and correct method of keeping an infant warm by skin- to- skin contact	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.19	Describe the environmental measures to maintain temperature	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE24.20	Assess for hypothermia and maintain temperature	S	SH	Y	Skillslab	Skills Assessment	
PE24.21	Provide BLS for children in manikin	S	P	Y	SkillsLab	Skills Assessment	3
PE24.22	Counsel parents of dangerously ill/ terminally ill child to break a bad news	S	SH	Y	DOAP	Document in Log book	
PE24.23	Obtain Informed Consent	S	SH	Y	DOAP	Document in Log book	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
Topic 25: Respiratory system		**Number of competencies: (06)**		**Number of competencies that require certification: (NIL)**			
PE25.1	Describe the etio-pathogenesis, clinical features and management ofAcute Otitis Media (AOM)	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE25.2	Describe the etio-pathogenesis, clinical features and management of Epiglottitis	K	KH	Y	LGT, SGT	Written/ Viva voce	

PE25.3	Explain the etio-pathogenesis, clinical features and management ofAcute laryngo- tracheo-bronchitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE25.4	Describe the etiology, clinical features and management of Stridor in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE25.5	Describe the types, clinical presentation, and management of foreign body aspiration in infants and children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE25.6	Describe the etio-pathogenesis, diagnosis, clinical features, management and prevention of lower respiratory infections including bronchiolitis, wheeze associated LRTI Pneumonia and empyema	S	SH	Y	Bedside clinics, SGT,LGT	Skill assessment /Written /Viva voce	
Topic 26: Anemia and other Hemato-oncologic disorders in children Number of competencies: (17). Number of competencies that require certification: (NIL)							
PE26.1	Explain the etio-pathogenesis, clinical features, classification and approach to a child with anaemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE26.2	Describe the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE26.3	Describe the etiopathogenesis, clinical features and management of VITB12, Folate deficiency anaemia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE26.4	Explain the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
	anaemia and hemolytic uremic syndrome						
PE26.5	Describe the National Anaemia Control Program	K	KH	Y	LGT, SGT	Written/ Viva voce	

PE26.6	Describe the cause of thrombocytopenia in children: describe theclinical features and management of Idiopathic Thrombocytopenic Purpura(ITP)	K	KH	N	LGT, SGT	Written/ Viva voce	
PE26.7	Explain the etiology, classification, pathogenesis and clinical features of Hemophilia in children	K	KH	N	LGT, SGT	Written/ Viva voce	
PE26.8	Explain the etiology, clinical presentation and management of AcuteLymphoblastic Leukemia inchildren	K	KH	N	LGT, SGT	Written/ Viva voce	
PE26.9	Explain the etiology, clinical presentation and management of lymphomain children	K	KH	N	LGT, SGT	Written/ Vivavoce	
PE26.10	Perform examination of the abdomen, demonstrate organomegaly	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
PE26.11	Interpret CBC, LFT	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
PE26.12	Perform and interpret peripheral smear	S	SH	Y	DOAP	Document in log book	
PE26.13	Explain the indications for Hemoglobin electrophoresis and interpret report	K	K	N	SGT	Viva voce	
PE26.14	Demonstrate, performance of bone marrow aspiration in manikin	S	SH	Y	Skillslab	Document in log Book	
PE26.15	Enumerate the referral criteria for Hematological conditions	S	SH	Y	Bedside clinics, SGT	Viva voce	
PE26.16	Counsel and educate patients about prevention and treatment ofanemia	A/C	SH	Y	Bedside clinics, Skills lab	Document in log book	
PE26.17	Enumerate the indications for splenectomy and precautions	K	K	N	SGT Activity	Viva voce	
Topic 27: Systemic Pediatrics-Central Nervous system		**Number of competencies: (14)**		**Number of competencies that require certification:(NIL)**			

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**SuggestedTeaching Learning methods**	**SuggestedAssessment methods**	**Number required tocertify P**
PE27.1	Explain the etio-pathogenesis, clinical features, complications, management, and prevention of acute bacterial Meningitis in children	K	KH	Y	LGT, SGT	Written/ Viva voce	

PE27.2	Describe the etio-pathogenesis, clinical features, complications, management and preventionof tuberculous meningitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.3	Distinguish bacterial, viral and tuberculous meningitis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.4	Explain the etio-pathogenesis, classification, clinical features, complication and management of Hydrocephalus in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.5	Explain the etio-pathogenesis, clinical features, and management of Infantile hemiplegia	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.6	Explain the etio-pathogenesis, clinical features, complications and management of Febrile seizures in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.7	Define epilepsy. Discuss the pathogenesis, clinical types, presentation and management of Epilepsy in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.8	Define status Epilepticus. Discuss the clinical presentation and management	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.9	Describe the etio-pathogenesis, clinical features and management of Mental retardation in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.10	Describe the etio-pathogenesis, clinical features and management of children with cerebral palsy	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.11	Enumerate the causes of floppiness in an infant and discuss the clinical features, differential diagnosis and management	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE27.12	Explain the etio-pathogenesis, clinical features and management of Duchene muscular dystrophy	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**
PE27.13	Interpret and explain the findings in a CSF analysis	S	SH	Y	SGT	Logbook	

PE27.14	Perform in a mannequin lumbar puncture. Discuss the indications, contraindication of the procedure	S	SH	Y	Bedside clinics, Skills lab	Skill assessment	
Topic 28: Allergic Rhinitis, Atopic Dermatitis, Bronchial Asthma		**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**		
PE28.1	Describe the etio-pathogenesis, clinical signs, management and prevention of AllergicRhinitis in Children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE28.2	Explainthe etio-pathogenesis, clinical types, presentations, management and prevention of childhood Asthma	K	KH	Y		Written/ Viva voce	
PE28.3	Develop a treatment plan for Asthma appropriate to clinical presentation & severity	S	SH	Y		Skill assessment	
PE28.4	Enumerate the indications for PFT	K	K	N		Viva voce	
PE28.5	Observe administration of Nebulization	S	SH	Y		Document in log book	
Topic 29: Chromosomal Abnormalities		**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**		
PE29.1	Describe the genetic basis, risk factors, clinical features, complications, prenatal diagnosis, management and genetic counselling in Down Syndrome.	K	KH	Y		Written/ Viva voce	
PE29.2	Interpret normal Karyotype and recognize Trisomy 21	S	SH	Y	Bedside clinics, Skills lab	Log book	
PE29.3	Counsel parents regarding -1.Present child, 2.Risk in the next pregnancy	A/C	SH	N	Bedside clinics, Skills lab	Log book	
PE29.4	Describe the geneticbasis, risk factors, clinical features, complications, prenatal diagnosis, management and genetic counselling in Turner's Syndrome	K	KH	N	LGT, SGT	Written/ Viva voce	
PE29.5	Describe the genetic basis, risk factors, clinical features, complications, prenatal diagnosis, management and genetic counselling in Klinefelter Syndrome	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core Y/N**	**Suggested Teaching Learning methods**	**Suggested Assessment methods**	**Number required tocertify P**

Topic 30: Endocrinology		Number of competencies: (07)			Number of competencies that require certification: (01)		
PE30.1	Describe the etiology (congenital & acquired), clinical features, management of Hypothyroidism in children	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE30.2	Interpret and explain neonatal thyroid screening report	S	SH	Y	Bedside clinics, SGT	Skill assessment	
PE30.3	Describe the etiology, clinical types, clinical features, diagnostic criteria, complications and management of Diabetes mellitus in children	K	KH	Y	LGT, SGTs	Written/ Viva voce	
PE30.4	Recognize clinical features DKA, Perform and interpret Urine Dip Stick for Sugar & Ketone bodies & refer	S	P	Y	DOAP	Skill assessment	3
PE30.5	Perform genital examination and recognize Ambiguous Genitalia, counsel and refer	S	SH	Y	Bedside clinicSkills lab	Skill assessment	
PE30.6	Define precocious and delayed Puberty, Perform Sexual Maturity Rating (SMR), Recognize precocious and delayed Puberty and refer	K, S	KH	Y	LGT, SGT	Written/ Viva voce	
PE30.7	Identify deviations in growth and plan appropriate referral	S	P	Y	Bedside clinics,Skills Lab	Skill assessment	
Topic 31:Vaccine preventable Diseases – Tuberculosis		**Number of competencies: (14)**			**Number of competencies that require certification: (NIL)**		
PE31.1	Describe the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.2	Describe the various diagnostic tools for childhood tuberculosis	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.3	Describe the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.4	Describe the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.5	Elicit, document and present history of contact with tuberculosis in every patient encounter, Identify BCG scar and interpret a Mantoux test.	S	SH	Y	Bedside clinics, Skilllab	Skill assessment	
PE31.6	Interpret blood tests in the context of laboratory evidence for tuberculosis	S	SH	N	Bedside clinics, SGT	Log book	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required tocertify P
PE31.7	Describe the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC	K	KH	Y	Bedside clinics, SGT	Written/ Viva voce	
PE31.8	Enumeratethe indications, discuss the limitations of methods of culturing M. Tuberculosis and the newer diagnostic tools for Tuberculosis including BACTEC CBNAAT an-d their indications	K	KH	Y	SGT	Written/ Viva voce	
PE31.9	Enumerate the common causes of fever and describe the etiopathogenesis, clinical features, complications and managementof fever inchildren	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.10	Enumerate the common causes of fever and describe the etiopathogenesis, clinical features, complications and managementof child with exanthematous illnesses like Measles, Mumps, Rubella &Chicken pox	K	KH	Y	LGT, SGT	Written/ Viva voce	
PE31.11	Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and managementof child with Diphtheria, Pertussis, Tetanus.	K	KH	Y	LGT, SGT	Written/ Vivavoce	
PE31.12	Enumerate the common causes of fever and discuss the etiopathogenesis, clinical features, complications and managementof child withTyphoid	K	KH	Y	LGT, SGT	Written/ Vivavoce	
PE31.13	Enumerate the common causes of fever and discuss theetiopathogenesis, clinical features, complications and management of child withDengue, Chikungunyaand other vectorborne diseases	K	KH	Y	LGT, SGT	Written/ Vivavoce	
PE31.14	Enumerate the common causes of fever and discuss theetiopathogenesis, clinical features, complications and managementof children with Common Parasitic infections, malaria, leishmaniasis, filariasis, helminthic infestations, amebiasis, giardiasis	K	KH	Y	LGT, SGT	Written/ Vivavoce	
Topic 32: The role of the physician in the community		**Number of competencies: (01)**			**Number of competencies that require certification : (NIL)**		
PE32.1	Identify, Describe and Defend medicolegal, socio-cultural and ethicalissuesas they pertain to health care in children (including Parental rights and right to refuse treatment)	K	KH	Y	SGT	Written/ Viva voce	

PSYCHIATRY (CODE: PS)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PSYCHIATRY (Topics=13, Competencies=17)							
Topic 1: Introduction to Psychiatry		**Number of competencies:03**			**Number of competencies that require certification : (NIL)**		
PS 1.1	Describe the classification of psychiatric disorders and its basis (neurotic vs psychotic; organic vs non-organic/functional)	K	KH	N	LGT/SDL	Written/ Tutorial	
PS1.2	Elicit history in patient presenting with psychiatric disorder(s)	S	SH	Y	Bedside clinic, DOAP session	Direct Observation	
PS1.3	Perform mental status examination (MSE) in patients presenting with psychiatric disorder(s)	S	SH	Y	Bedside clinic, DOAP session	Direct Observation	
Topic 2: Organic Psychiatric Disorders		**Number of competencies:01**			**Number of competencies that require certification : (NIL)**		
PS 2.1*	Describe common Organic Psychiatric Disorders with emphasis on Delirium & Dementia	K	KH	Y	LGT/Flipped classroom	Written, Tutorial	
Topic 3: Psychoactive Substance Use Disorders and other addiction disorders		**Number of competencies: 01**			**Number of competencies that require certification : (NIL)**		
PS 3.1	Describe and identify clinical presentation of abuse of alcohol, nicotine and other psychoactive substances prevalent in your area and their management.	S, K	SH, KH	Y	Bedside clinic, DOAP	Direct observation, OSCE	
Topic 4: Schizophrenia and other Psychotic disorders		**Number of competencies: 01**			**Number of competencies that require certification : (NIL)**		
PS 4.1	Diagnose and manage a case of Schizophrenia at primary care level	S,K	KH	Y	Bedside teaching	Direct observation, OSCE	
Topic 5: Depressive disorders		**Number of competencies: 02**			**Number of competencies that require certification : 1**		
PS 5.1	Diagnose and manage case of depression at primary care level	S	SH	Y	Bedside teaching, role-play, DOAP	OSCE, Checklist based Skill assessment	1

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PS 5.2	Identify red flag signs of depression and refer to a specialist	S	KH/ SH	Y	Role play, Cine-education	Checklist based Skill assessment	
Topic 6: Bipolar disorders	**Number of competencies: 01**				**Nu mber of competencies that require certification : (NIL)**		
PS 6.1	Diagnose and manage an episode of Mania at primary care level	S	SH	N	Bedside teaching	Short answer, viva-voce	
Topic 7: Anxiety Disorders (including OCD)	**Number of competencies: 01**				**Number of competencies that require certification : (NIL)**		
PS 7.1	Diagnose and manage anxiety disorders at primary care level	S	SH	Y	Bedside teaching, role-play, DOAP	OSCE, Checklist based Skill assessment	
Topic 8: Stress related disorders	**Number of competencies:01**				**Number of competencies that require certification : (NIL)**		
PS8.1	Diagnose stress related disorders (Acute Stress Disorder and Adjustment Disorders) and make appropriate referral	K	SH	Y	Bedside clinic, Role play	Skill assessment	
Topic 9: Psychosexual and Gender Identity Disorders	**Number of competencies:02**				**Number of competencies that require certification : (NIL)**		
PS 9.1	Describe common psychosexual disorders	K	K	N	LGT	MCQ, Written, Viva voce	
PS9.2	Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles on dealing with LGBTQA+ community.	K	K	Y	LGT/SDL	MCQ, Written Viva voce	
Topic 10: Psychiatric Disorders in Childhood and Adolescence	**Number of competencies:01**				**Number of competencies that require certification : (NIL)**		
PS 10.1	Classify and describe disorders commonly seen in childhood and adolescence with emphasis on ADHD and Autism Spectrum Disorders	K	KH	Y	LGT	MCQ, Written Viva voce	
Topic 11: Intellectual Disability Disorder	**Number of competencies: 01**				**Number of competencies that require certification : (NIL)**		
PS11.1	Describe Intellectual Disability Disorder	K	KH	Y	LGT	MCQ, Written Viva voce	
Topic 12: Psychiatric Emergencies	**Number of Competencies: 01**				**Number of competencies that require certification : 1**		

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PS12.1	Perform suicide risk assessment	S	SH	Y	Role play, bedside teaching	Skill assessment	01
Topic 13: Therapeutics	**Number of Competencies: 01**			**Number of competencies that require certification : (NIL)**			
PS 13.1	Describe the process of modified ECT and identify misconceptions associated with ECT	K	KH	Y	SGT observation & discussion, Video	Written/ Viva voce	

DERMATOLOGY, VENEREOLOGY & LEPROSY (CODE: DR)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
DERMATOLOGY, VENEREOLOGY & LEPROSY (Topics=15,Competencies=48)							
Topic 1: Acne Number of competencies: (02) Number of competencies that require certification: (NIL)							
DR1.1	Recognize a patient with acne vulgaris including the risk factors, etiology and clinical grading	K/S/A	KH/SH	Y	LGT, SGT , Bed side teaching, Demonstration	Written, Tutorials, Direct Observation, OSCE	
DR1.2	Device a management plan of a patient with acne	K	KH	Y	LGT, SGT, Bed side teaching	Written, Tutorials, Direct Observation, OSCE, Prescription writing	
Topic 2: Vitiligo Number of competencies: (01) Number of competencies that require certification: (NIL)							
DR 2.1	Identify and differentiate vitiligo from other causes of hypo pigmented lesions and present a treatment plan	K/S	KH/SH	Y	SGT, Bedside teaching, Demonstration	Written, OSCE, Picture based MCQs	
Topic 3: Papulosquamous disorders Number of competencies:(03) Number of competencies that require certification: (NIL)							
DR 3.1	Identify and distinguish psoriatic lesions from other causes	K/S	KH/SH	Y	SGT, Bedside teaching, Demonstration	Written, OSCE, Picture based MCQs	
DR3.2	Demonstrate the Grattage test	S	SH	Y	Bedside teaching, Demonstration, DOAP	Direct Observation, OSCE	
DR3.3	Devise a treatment plan for a patient with psoriasis and counsel the patient regarding various treatment options and chronicity of disease	K/S/A/C	SH	Y	SGT, Bedside teaching, Role Play	Mini CEX, Case Based Discussion, OSCE	
Topic 4: Lichen Planus Number of competencies:(01) Number of competencies that require certification: (NIL)							
DR 4.1	Identify and manage a case of lichen planus	K/S	KH/SH	Y	SGT, Bedside teaching,	Written, OSCE,	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
					Demonstration	Picture based MCQs	
Topic 5: Scabies Number of competencies:(01) Number of competencies that require certification: (NIL)							
DR5.1	Devise a treatment plan for management of scabies including adverse drug reactions	K	KH	Y	SGT, Bedside teaching	Written, Case Based Discussion, OSCE	
Topic 6: Pediculosis Number of competencies:(01) Number of competencies that require certification: (NIL)							
DR 6.1	Describe the pathogenesis, diagnostic features and management of pediculosis in adults and children	K	KH	Y	LGT, SGT, Seminar, Flipped Classroom	Written, Tutorials	
Topic 7: Fungal Infections Number of competencies:(02) Number of competencies that require certification: (NIL)							
DR7.1	Demonstrate candida/dermatophytes in fungal scrapings on KOH mount	S	SH	Y	Bedside teaching, DOAP	DOPS, OSCE	
DR7.2	Manage a case of fungal infections	K	KH	Y	LGT, SGT	Written, Case based discussion	
Topic 8: Common Viral Infections Number of competencies:(05) Number of competencies that require certification: (NIL)							
DR8.1	Describe the aetiology, microbiology, pathogenesis, clinical presentations and management of common viral infections of the skin in adults and children	K	KH	Y	LGT, SGT, Bed side teaching, Self-Directed Learning (SDL)	Written, Tutorials, Direct Observation	
DR8.2	Identify and distinguish herpes simplex and herpes labialis from other skin lesions	K/S	KH/SH	Y	SGT, Bedside teaching, Demonstration	Written, OSCE, Picture based MCQs	
DR8.3	Identify and distinguish herpes zoster and varicella from other skin lesions	K/S	KH/SH	Y	SGT, Bedside teaching, Demonstration	Written, OSCE, Picture based MCQs	
DR8.4	Identify and distinguish viral warts from other skin lesions	K/S	KH/SH	Y	SGT, Bedside teaching, Demonstration	Written, OSCE, Picture based MCQs	
DR8.5	Identify and distinguish molluscum contagiosum from other skin	K/S	KH/SH	Y	SGT, Bedside teaching,	Written, OSCE,	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
	lesions				Demonstration	Picture based, MCQs	
Topic 9: Leprosy Number of competencies:(06) Number of competencies that require certification: (1)							
DR9.1	Describe the epidemiology, clinical features and classification ofLeprosy	K	KH	Y	LGT, SGT, Seminar, Flipped Classroom	Written, Tutorials	
DR9.2	Demonstrate an appropriate neurologic examination in Leprosy	S	SH	Y	Bedside teaching, DOAP	DOPS, OSCE	2
DR9.3	Enumerate the indications and observe the performance of a slitskin smear in patients with leprosy	K	KH	Y	SGT, Bedside teaching	Written, Tutorials	
DR9.4	Effectively treat a case of Lepra Reaction	K/S/A/C	KH/SH	Y	LGT, SGT, Bed Side teaching	Case Based Discussion, Prescription Writing, Direct Observation	
DR9.5	Effectively manage a case of Leprosy based on National Guidelines and WHO Guidelines	K/S/C	KH/SH	Y	LGT, SGT, Bed Side teaching, SDL	Written, Case Based Discussion, Direct Observation, Prescription Writing	
DR9.6	Effectively manage complications of Leprosy and counsel regarding disability and stigma	K/S/A/C	KH/SH	Y	LGT, SGT, Bed Side teaching, Simulations	Written, Case Based Discussion, OSCE	
Topic 10: Sexually Transmitted Diseases Number of competencies:(11) Number of competencies that require certification: (NIL)							
DR10.1	Understand the rationale and Effectively use Syndromic case management for patients presenting with sexually transmitted diseases	K	KH	Y	SGT, Bedside teaching	Written, Tutorials, OSCE	
DR10.2	Describe the clinical features, stages, and appropriate use of diagnostic tests for diagnosis of Syphilis	K	KH	Y	LGT, SGT, Bedside teaching	Written, Tutorials, OSCE	
DR10.3	Describe the clinical features, stages, and appropriate use of diagnostic tests for diagnosis of non-syphilitic genital ulcer namely chancroid and herpes genitalis	K	KH	Y	LGT, SGT, Bedside teaching Clinic, SDL	Written, Tutorials, OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
DR10.4	Conduct a proper examination in a patient with GUD ensuring privacy, confidentiality in presence of chaperone	S/C	SH	Y	Bedside teaching, DOAP	Written, Tutorials, Direct observation, Case based discussion	
DR10.5	Effectively take sexual history and provide patient education on safe sexual behaviours including pretest counselling for HIV	C	SH	Y	Role play, Simulations	OSCE, Rating scale, Direct observation and feedback	
DR10.6	Effectively manage syphilis and genital ulcer disease based on clinical features and serological tests including in pregnancy and neonates and advise as per syndromic case management	K/S/A/C	SH	Y	SGT, Bedside teaching, Role Play	Case Based Discussion, OSCE, Prescription writing	
DR10.7	Recognize a patient with LGV and Donovanosis based on clinical findings and provide appropriate therapy using syndromic case management	K/S	KH/SH	Y	LGT, SGT, Bedside teaching	Written, OSCE, Direct Observation, Picture based MCQs, Prescription writing	
DR10.8	Describe the etiology, diagnostic and clinical features and management of gonococcal and non-gonococcal urethritis	K	KH	Y	LGT, SGT, Flipped Classroom, SDL	Written, Tutorials	
DR10.9	Effectively manage a patient with urethral discharge and counsel regarding prevention as per syndrome case management guidelines	K/S/A/C	SH	Y	SGT, Bedside teaching, Role Play	Case Based Discussion, OSCE, Prescription writing	
DR10.10	Diagnose and manage a patient presenting with vaginal discharge as per syndrome case management guidelines	K/S/C	SH	Y	SGT, Bedside teaching	Written, Case Based Discussion, OSCE	
DR 10.11	Diagnose and treat a patient with genital warts and provide patient education	K/S/A/C	SH	Y	LGT, Bedside teaching, Simulations	Written, OSCE, Case based discussion	
Topic 11:HIV Number of competencies:(02) Number of competencies that require certification: (NIL)							

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
DR11.1	Diagnose and manage common dermatologic manifestations of HIV including opportunistic infections(OI) based on clinical features and appropriate lab tests	K, S	KH	Y	LGT, Bedside teaching, SDL	Written, Tutorials, Case based discussion, Written, OSCE, Direct Observation, Picture based MCQs	
DR11.2	Recognize common dermatological manifestations of ART drugs and initiate primary management appropriately	K, C	KH	Y	LGT, SGT, Bedside teaching, Flipped Classroom	Written, Tutorials, OSCE, Written,OSCE, Direct Observation, Picture basedMCQs	
Topic 12 : Eczemas, Erythroderma and cutaneous adverse drug reactions Number of competencies:(5)					**Number of competencies that require certification: (NIL)**		
DR12.1	Identify common types of eczema (both endogenous and exogenous based on clinical features and history	K/S	KH/SH	Y	LGT, SGT, Bedside teaching, Flipped Classroom	Written, Case Based Discussion, OSCE,Picture based MCQs	
DR12.2	Provide basic management for common eczemas including topical and systemic therapy	K/S	KH/SH	Y	SGT, Bedside teaching, SDL	Written, Case Based Discussion, OSCE, Prescription writing	
DR12.3	Diagnose Erythroderma, including medical complications and provide appropriate primary care to stabilize a patient before referral	K,S	KH/SH	Y	SGT, Bedside teaching, SDL	Written, Tutorials, Case based discussion	
DR12.4	Distinguish adverse drug reactions like Fixed drug eruption, Drug Hypersensitivity syndrome and Steven Johnson syndrome/ Toxic epidermal necrolysis from other skin conditions	K/S	KH/SH	Y	LGT, Bedside teaching, Demonstrations, SDL	Written, Tutorials, Case based discussion, OSCE	
DR12.5	Provide primary care in patients with Adverse drug reactions	K/S/A/C	KH/SH	Y	SGT, Bedside teaching, Video LGTs	Written, Viva Voce, Case based discussion	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
Topic 13:Vesiculo- bullous Lesions	**Number of competencies:(02)**		**Number of competencies that require certification: (NIL)**				
DR13.1	Diagnose common auto Immune vesiculo- bullous disorders like pemphigus and bullous pemphigoid based on clinical features and appropriate use of Nikolsky's sign and Bulla spread sign	K/S	KH/SH	Y	LGT, SGT, Bedside teaching, Demonstration	Written, Tutorials , Case based discussion, OSCE, Direct Observation, Picture based MCQs	
DR 13.2	Provide primary management for a patient with vesiculo-bullous disorder before referral	K/S/A/C	KH/SH	Y	Bedside teaching, SGT	Written, Tutorials, Case Based Discussion, Prescription writing	
Topic 14 : Urticaria Angioedema	**Number of competencies: (03)**		**Number of competencies that require certification : (01)**				
DR14.1	Classify urticaria and angioedema and describe etio-pathogenesis, clinical features and precipitating factors	K	KH	Y	LGT,SGT, Symposium	Written (Short notes, part of structured essay), Tutorials, Problem solving exercises, OSCE	
DR14.2	Identify and distinguish urticaria and angioedema from other skin lesions and provide basic management	K/S	KH/SH	Y	SGT, Bedside teaching, Video LGT	Written examination, Tutorials, OSCE, Picture based MCQs	
DR14.3	Demonstrate Dermographism	S	SH	Y	Bedside teaching, DOAP	DOPS	**2**
Topic 15: Pyoderma	**Number of competencies: (03)**		**Number of competencies that require certification: (NIL)**				
DR15.1	Identify the clinical presentation of various types of cutaneous bacterial infections	K/S	KH/SH	Y	Bedside teaching, Video LGT, SGT	Written,Tutorials, Picture based MCQs, OSCE	
DR15.2	Enumerate the indications and adverse reactions of topical and systemic drugs used in the treatment of pyoderma	K	KH	Y	LGT, SGT, Symposium, Flipped Classroom	Written,Tutorials, Prescription	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Requiredto certify P
						writing, Problem solving exercises	
DR15.3	Recognize the need for surgical referral in pyoderma	K	KH	Y	Video LGT, Bedside teaching, SGT	Written, Tutorials, OSCE	

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NATIONAL MEDICAL COMMISSION

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



Volume III-2024

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

2024

National Medical Commission
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New Delhi 110 077

FOREWORD

The National Medical Commission (NMC) was created on 24th September, 2020 by the Act of Parliament replacing the erstwhile Medical Council of India and Board of Governors. The foundation for making of an Indian Medical Graduate ('Doctor') depends on building a sound base of medical education. In the year 2019, a committed team appointed by erstwhile MCI revolutionized the age-old didactic teaching system in Indian medical colleges by bringing in Competency Based Medical Education (CBME). This unique approach has raised the level of medical education with respect to quality, versatility and horizontal- vertical alignment of all subjects. The mandate of NMC to see that the first line of health care leaders who reach out to the common masses empathizing with the problems of the rural populace are being met with. The two-pronged approach of increasing the quantity and improving the quality of medical education is being tackled with this approach.

Education has now become student-centric and patient-centric instead of pedagogic system. The first batch of students have now completed their training under CBME implemented in 2019. It was a demand from actively involved academia to revisit the curriculum and modify it so as to keep abreast at international level. Interim years of covid pandemic also were 'a good teaching academy' for all. Increasing influence of artificial

intelligence on student community, matched with rising cost of medical education and competitiveness, instead of accommodative, helping and balanced approach, has led to increasing risk of losing social intelligence and humane approach amidst the emerging doctors. The risk of creating overqualified clerks looms large on our medical system.

A national team of experienced as well as emerging empathetic and talented teachers engaged as full-time faculty in various medical institutions were invited by the Undergraduate Education Board (UGMEB) of the NMC to invest their extra energy and hours to assess the curricula, examinations, AETCOM, vertical and horizontal integration of various subjects and bring in modifications. Each subject had committee of five persons on an average, from different parts of the country. Totally 93 experts have given their valuable time and energy in framing this new curriculum and all three volumes, prepared by their predecessors in 2019. The hard work done by them was the base on which this edifice has further been refined.

We are sure that fraternity and students are going to have an educational journey that will be full of fun, knowledge and experience sharing. UGMEB of the NMC acknowledges each and every one involved in the process, named and unsung heroes who have been the part of this exercise of bringing the document to the readers.

Dr. Aruna V. Vanikar, President,
Dr. Vijayendra Kumar, Member,
UGMEB, NMC

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How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created bysubject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. The manual must be used withreference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the Roles (global competencies) extracted from the Competency Based Medical Education (CBME) Guidelines, 2024. The global competencies identified asdefining the roles of the Indian Medical Graduate are the broad competencies that the learner must aspire to achieve, teachers and curriculum plannersmust ensure that the learning experiences are aligned to this Manual.

Extract from the Competency Based Medical Education (CBME) Guidelines, 2024

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby advocated. The first contact physician needs to be skilful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

2.1 National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

a. Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.

b. Learn key aspects of National policies on health and devote himself to its practical implementation.

c. Achieve competence in the practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

d. Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

e. Become an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2 Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

a. Be competent for working in the health care team from Phase I MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

b. Be competent to practice preventive, promotive, curative, palliative and rehabilitative· medicine in respect to the commonly encountered health problems.

c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential medicines" and their common adverse effects.

d. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

e. Possess the attitude for continued self-learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

f. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

i. Family Welfare and Maternal and Child Health (MCH);

ii. Sanitation and water supply;

iii. Prevention and control of communicable and non-communicable diseases;

iv. Immunization;

v. Health Education and advocacy;

vi. Indian Public Health Standards (IPHS) at various level of service delivery;

vii. Bio-medical waste disposal;

viii. Organizational and or institutional arrangements.

g. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospitalmanagement, principal inventory skills and counselling.

h. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such

measures with maximum community participation.

i. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

j. Be competent to work in a variety of health care settings.

k. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility, dependability, and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduates to acquire certifiable skills as given in comprehensivelist of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS)Indian Medical Graduate, as given in theGraduate Medical Education Regulations.

2.3 Goals for the Learner

In order to fulfil these goals, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

a. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

b. Leader and member of the health care team and system with capabilities to collect, analyse, synthesize and communicate health data appropriately.

c. Communicate with patients, families, colleagues, community and community in a methodological and skilful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

d. Lifelong learner committed to continuous improvement of skills and knowledge.

e. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, profession, and society. Training of humanities and social sciences will be useful for this training.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education. Curriculum that focuses on the desired and observable activity in real life situations. In order to effectively fulfil the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1 Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.2 Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.

3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.

3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5 Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6 Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.

3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

i. Disease prevention,

ii. Health promotion and cure,

iii. Pain and distress alleviation, and

iv. Rehabilitation and palliation.

3.1.13 Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,

3.1.14 Demonstrate ability to appropriately identify and refer patients who may require· specialized or advanced tertiary care.

3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3.2 Leader and member of the health care team and system

3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4 Access and utilize components of the health care system and health delivery in a_ manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyse and utilize health data.

3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3 Communicator with patients, families, colleagues and community

3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a language that patients, families, colleagues and community understands and in a manner that will improve patient patients, families, colleagues and community satisfaction and health care outcomes.

3.3.2 Demonstrate ability to establish professional relationships with patients, families, colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

3.3.3 Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient’s preferences, values, prior

experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision- making and overcoming hesitancy towards health initiatives.

3.4 Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1 Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2 Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3 Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4 Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.

3.4.5 Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5 Professional who is committed to excellence, is ethical, responsive and accountable to patients, the profession and community.

3.5.1 Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2 Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3 Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4 Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5 Demonstrate commitment to the growth of the medical profession as a whole.

Section 2

Subject-wise competencies

Section 2 contains subject-wise competencies that must be achieved at the end of instruction in that subject. These are organised intables.

Competencies (Outcomes) in each subject are grouped according to topics number-wise. It is important to review the individual competencies inthe light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified.The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’indicates independent performance without supervision and is required rarely in the pre-internship period. The competency is a core (Y - must achieve) or anon-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under thesection “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s logbook is also given.

The number of topics and competencies in each subject are given below:

Topics and competencies in Phase 1 & Phase 2 subjects (Volume I)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Anatomy	82	413
2.	Physiology	12	136
3.	Biochemistry	14	84
4.	Pharmacology	10	92
5.	Pathology	35	182
6.	Microbiology	11	74
7.	Forensic Medicine	14	158
	Total	**178**	**1139**

Topics andcompetencies in Medicine and Allied subjects (Volume II)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	Community Medicine	20	136
2.	General Medicine	29	525
3.	Paediatrics	35	406
4.	Psychiatry	13	17
5.	Dermatology, Venereology & Leprosy	15	48
	Total	**112**	**1132**

Topics and competencies in Surgery and Allied subjects (Volume III)

Sr. No.	Subjects	Number of topics	Number of competencies
1.	General Surgery	30	133
2.	Ophthalmology	10	60
3.	Otorhinolaryngology	04	63
4.	Obstetrics & Gynaecology	38	141
5.	Orthopaedics’	14	40
6.	Anaesthesiology	11	52
7.	Radiodiagnosis	07	21
	Total	**114**	**510**

Understanding the competencies table

Understandingthecompetenciestable

A	B	C	D	E	F	G	H
No.	**Competencies**	**Domain**	**K/KH/SH/P**	**Core**	**Suggested Teaching LearningMethod**	**Suggested Assessment method**	**No. requiredto certify (P)**
Physiology							
PY1.1	Describethestructureand functions of a	K	KH	Y	LGT, SGT	Written/Viva	
IM 4.10	Elicit *document* and presentamedicalhistory thathelpsdelineatethe	S	SH	Y	BedSideclinic, DOAP	OSCE, Direct observation	3

Descriptionofcompetency

competencyiscoreor

Identifiesifthe

desirable

YindicatesCore;
N-non-core

.Uniquenumberofthecompetency

First two alphabets represent the subject code (Table 1), number following alphabet reflects competency number, following period is a running number.

Identifies the domain

or domains addressed
K - Knowledge
S - Skill
A - Attitude
C - Communication

Identifies the level of competency required based on the Miller's pyramid
K - Knows
KH - Knows How
SH - Show How
P - Perform independently

Identifies the suggested learning method.
DOAP - Demonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method
Skill assessment in Clinics, Skills lab, Practicals etc. by direct observation

Number of times a Skill issuggestedtobedone

LGT-Large group teaching; SGT-Small group teaching; OSCE-Objective structured clinical examination; P- indicate how many competencies/competencies must be done independently under observation for Certification. ***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents;**

Deriving learning objectives from competencies

Deriving learning objectives from competencies

K	Knows	A knowledge attribute – Usually enumerates or describes
KH	Knows how	A higher level of knowledge – is able to discuss or analyse
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify the etiology of meningitis based on given CSF parameters**	**K/S**	**SH**	**Y**

LO 1	At the end of the session the **phase II student** must be able to enumerate the most common causes of meningitis correctly
LO 2	At the end of the session the **phase II student** must be able to enumerate the components of CSF analysis correctly
LO 3	At the end of the session the **phase II student** must be able to **describe** the CSF features for a given etiology of meningitis **accurately**
LO 4	At the end of the session the **phase II student** must be able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

Learning Objective (LO): Statement of what a learner should be able to do at the end of a specific learning experience

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning methods from competencies

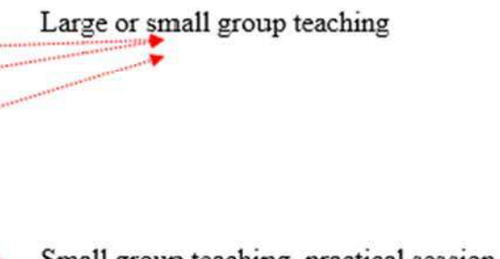
Deriving learning methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the **Phase II student** must be able to enumerate the most common causes of meningitis **correctly**
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given etiologic of meningitis **accurately**
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**



*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

Deriving assessment methods from competencies

Deriving assessment methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA34.3*	**Identify** the etiology of meningitis based on given CSF parameters	K, S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

LO 1	At the end of the session the Phase II student must be able to enumerate the most common causes of meningitis correctly	Written/SAQ: Enumerate 5 causes of meningitis based on their prevalence in India
LO 2	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
LO 3	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given aetiology of meningitis **accurately**	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
LO 4	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**	Short note / part of the structured essay/ Direct observation/OSPE/ Viva voce Review the CSF findings in the following patient and identify (write or vocalize) the most likely etiology

*** Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document**

Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

   In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individualand community being served.

   In other words: What should you have? Or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of as pecific learning experience. In other words: What the Indian Medical Graduate should know, do, or behave.

Action Verbs used in this manual

Knowledge	**Skill**	**Attitude/communicate**
Enumerate	Identify	Counsel
List	Demonstrate	Inform
Describe	Perform under supervision	Demonstrate understanding of
Discuss	Perform independently	Communicate
Differentiate	Document	
Define	Present	
Classify	Record	
Choose	Elicit	
Interpret		
Report		

Note:

1. Specified essential competencies only will be required to be performed independently at the end of the final year M BBS.
2. The word 'perform' or 'do' isused ONLY if the task has to be done on patients or in laboratory practical in the pre/para-clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

Explanation of terms used in this manual

LGT (LGT)	Any instructional large group method including interactive lecture
SGT (SGT)	Any instructional method involving small groups of students in an appropriate learning context
DOAP (Demonstration-Observation-Assistance-Performance)	A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently
Skill assessment/ Direct observation	A session that assesses the skill of the student including those in the practical laboratory, skillslab, skills station that uses mannequins/papercase/simulated patients/real patients as the context demands
DOPS (Directly observed procedural skills)	DOPS is a method of assessment for assessing competency of the students in which the examiner directly observes the student performing procedure
Core	A competency that is necessary in order to complete the requirements of the subject (traditional must know)
Non-Core	A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)
National Guidelines	Health programs as relevant to the competency that are part of the National Health Program

Domains of learning

K	Knowledge
S	Skill
A	Attitude
C	Communication

Levels of competency

K	Knows	Acknowledge attribute-Usuallyenumeratesordescribes
KH	Knows how	A higher level of knowledge-isabletodiscussoranalyze
SH	Showshow	A skill attribute is able to interpret/demonstrateacomplex procedure requiring thought, knowledge and behavior
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Note:

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able toSH - Show how- an informed consent is obtained - it ispresumed that the preceding steps - the knowledge, the analyticalskills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

Volume III
Competency based Undergraduate Curriculum
in
Surgery & Allied subjects

GENERAL SURGERY (CODE:SU)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
GENERAL SURGERY (Topics:30, Competencies: 133)							
	Topic1: Metabolic response to injury	**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
SU1.1	Describe Basic concepts of homeo stasis, enumerate the metabolic changes in injury and their mediators.	K	KH	Y	LGT, Bed side clinic, SGT	Written/Vivavoce	
SU1.2	Describe the factors that affect the metabolic response to injury.	K	KH	Y	LGT, Bed side clinic,SGT	Written/Vivavoce	
SU1.3	Describe basic concepts of perioperative care.	K	KH	Y	LGT, Bed side clinic,SGT	Written/Vivavoce	
	Topic 2: Shock	**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
SU2.1	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU2.2	Describe the clinical features of shock and its appropriate treatment.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU2.3	Communicate and counsel patients and families about the treatment and prognosis of shock demonstrating empathy and care	A/C	SH	Y	DOAP	Skillassessment	
	Topic 3: Blood and blood components	**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**		
SU3.1	Describe the Indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU3.2	Observe blood transfusions.	S	SH	Y	SGT,DOAP	Skillsassessment, Log book	
SU3.3	Counsel patients and family/friends for blood transfusion and blood donation.	A/C	SH	Y	DOAP	Skillsassessment	
Topic 4: Burns Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU4.1	Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU4.2	Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	K	KH	Y	LGT,SGT	Written/Vivavoce	

SU4.3	Discuss the Medico legal aspects in burn injuries.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU4.4	Communicate and counsel patients and families on the outcome and rehabilitation demonstrating empathy and care.	A/C	SH	Y	SGT,Roleplay, Skills assessment	Vivavoce	
Topic 5: Wound healing and wound care Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU5.2	Elicit, document and present a history in a patient presenting with wounds.	C	SH	Y	LGT,SGT	Written/Vivavoce	
SU5.3	Differentiate the various types of wounds,plan and observe management of wounds.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU5.4	Discuss medico legal aspects of wounds	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 6: Surgical infections Number of competencies: (02) Number of competencies that require certification: (NIL)							
SU6.1	Define and describe the aetiology and pathogenesis of surgical Infections	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU6.2	Enumerate Prophylactic and therapeutic antibiotics Plan appropriate management	**K**	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 7: Surgical Audit and Research Number of competencies: (02) Number of competencies that require certification: (NIL)							
SU7.1	Describe the Planning and conduct of Surgical audit	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU7.2	Describe the principles and steps of clinical research in General Surgery	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 8: Ethics Number of competencies: (03) Number of competencies that require certification: (NIL)							
SU8.1	Describe the principles of Ethics as it pertains to General Surgery	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	-
SU8.2	Demonstrate Professionalism and empathy to the patient undergoing General Surgery	A/C	SH	Y	LGT,SGT, DOAP	Written/Vivavoce/ Skill assessment	
SU8.3	Discuss Medico-legal issues in surgical practice	A/C	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
Topic 9: Investigation of surgical patient Number of competencies (03) Number of competencies that require certification: (NIL)							
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	C	KH	Y	LGT,SGT	Written/Vivavoce	

SU9.2	Biological basis for early detection of cancer and multi disciplinary approach in management of cancer	C	KH	Y	LGT,SGT	Written/Vivavoce	
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately	C	SH	Y	DOAP	Skillassessment	
Topic 10: Pre, intra and post- operative management. Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU10.1	Describe the principles of perioperative management of common surgical competencies	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU10.2	Describe the steps and obtain informed consent in a simulated environment	S/A/C	SH	Y	DOAP	Skillassessment/Log book	
SU10.3	Observe common surgical competencies and assist in minor surgical competencies; Observe emergency lifesaving surgical competencies.	S	KH	Y	DOAPs	Logbook	
SU10.4	Perform basic surgical Skills such as First aid including suturing and minor surgical competencies in simulated environment	S	P	Y	DOAP	Skillassessment	
Topic 11: Anaesthesia and pain management Number of competencies: (06) Number of competencies that require certification: (NIL)							
SU11.1	Describe principles of Preoperative assessment.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU11.2	Enumerate the principles of general, regional, and local Anaesthesia.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU11.3	Demonstrate maintenance of an airway in a mannequin or equivalent	S	SH	Y	DOAP	Skillassessment	
SU11.4	Enumerate the indications and principles of daycare General Surgery	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU11.5	Describe principles of providing post-operative pain reliefand management of chronic pain.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU11.6	Describe Principles of safe General Surgery	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 12: Nutrition and fluid therapy Number of competencies: (03) Number of competencies that require certification: (NIL)							
SU12.1	Enumeratethecausesandconsequencesofmalnutritioninthe surgical patient	K	KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce	
SU12.2	Describeanddiscussthemethodsofestimationandreplacementof the fluid and electrolyte requirements in the surgical patient	K	KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce	
SU12.3	Discuss the nutritional requirements of surgical patients, the methodsofprovidingnutritionalsupportandtheircomplications	K	KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce	

Topic 13: Transplantation Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ Transplantation	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU13.3	Discuss the legal and ethical issues concerning organ donation	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU13.4	Counsel patients and relatives on organ donation in a simulated environment	S	SH	Y	DOAP	Skillassessment	
Topic 14: Basic Surgical Skills Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU14.1	Describe Aseptic techniques, sterilization and disinfection.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU14.2	Describe Surgical approaches,incisions and the use of appropriate instruments in Surgery in general.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU14.3	Describe the materials and methods used for surgical wound closure and anastomosis (sutures, knots and needles)	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU14.4	Demonstrate the techniques of asepsis and suturing in a simulated environment	S	SH	Y	DOAP	Skillassessment/Log book	
Topic 15: Biohazard disposal Number of competencies: (01) Number of competencies that require certification: (NIL)							
SU15.1	Describe **c**lassification of hospital waste and appropriate methods of disposal.	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 16: Minimally invasive General Surgery Number of competencies: (01) Number of competencies that require certification: (NIL)							
SU16.1	Minimally invasive General Surgery: Describe indications advantages and disadvantages of Minimally invasive General Surgery	K	K	Y	LGT, Demonstration, Bedside clinic, Discussion	Theory/ Practical / Orals/Written/Viva voce	
Topic 17: Trauma Number of competencies: (10) Number of competencies that require certification: (NIL)							
SU17.1	Describe the Principles of FIRSTAID	S	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.2	Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment	S	SH	Y	DOAP	Skill assessment	

SU17.3	Describe the Principles in management of mass casualties	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.4	Describe Pathophysiology, mechanism of head injuries	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.5	Describe clinical features for neurological assessment and GCS in head injuries	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.6	Chose appropriate investigations and discuss the principles of management of head injuries	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.7	Describe the clinical features of soft tissue injuries. Chose appropriate investigations and discuss the principles of management.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.8	Describe the pathophysiology of chest injuries.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.9	Describe the clinical features and principles of management of chest injuries.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU17.10	Demonstrate Airway maintenance. Recognizeand manage tension pneumothorax, hemothorax and flailchest in simulated environment.	S	SH	Y	DOAP	Skill assessment/Log book	
Topic 18: Skin and subcutaneous tissue Number of competencies: (03) Number of competencies that require certification: (NIL)							
SU18.1	Describe the pathogenesis, clinical features and management of various cutaneous and subcutaneous infections.	K	KH	Y	LGT,Small group Discussion	Written/Vivavoce	
SU18.2	Classify skin tumors Differentiate different skin tumors and discuss their management.	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU18.3	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.	S	SH	Y	Bedside clinic,SGT, DOAP	Skillassessment	
Topic 19: Developmental anomalies of face, mouth and jaws Number of competencies: (02) Number of competencies that require certification: (NIL)							
SU19.1	Describe the etiology and classification of cleftlip and palate	K	KH	Y	LGT,Small group Discussion	Written/Vivavoce	
SU19.2	Describe the Principles of reconstruction of cleftlip and palate	K	KH	Y	LGT,Small group Discussion	Written/Vivavoce	
Topic 20: Oropharyngeal cancer Number of competencies: (02) Number of competencies that require certification: (NIL)							
SU20.1	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer.	K	KH	Y	LGT,SGT	Written/Vivavoce	

SU20.2	Enumerate the appropriate investigations and discuss the Principles of treatment.	K	K	Y	LGT,SGT	Written/Vivavoce	
Topic 21: Disorders of salivary glands Number of competencies: (02) Number of competencies that require certification: (NIL)							
SU21.1	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU21.2	Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 22: Endocrine General Surgery: Thyroid and parathyroid Number of competencies: (06) Number of competencies that require certification: (NIL)							
SU22.1	Describe the applied anatomy and physiology of thyroid	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU22.2	Describe the etiopathogenesis of thyroidal swellings	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU22.3	Demonstrate and document the correct clinical examination of thyroid swellings and discuss the differential diagnosis and their Management	S	SH	Y	Bedsideclinic	Skillassessment	
SU22.4	Describe the clinical features, classification and principles of management of thyroid cancer	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU22.5	Describe the applied anatomy of parathyroid	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU22.6	Describe and discuss the clinical features of hypo - and Hyperparathyroidism and the principles of their management	K	KH	Y	LGT,SGT	Written/Vivavoce	
Topic 23: Adrenal glands Number of competencies: (03) Number of competencies that require certification: (NIL)							
SU23.1	Describe the applied anatomy of adrenal glands	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU23.2	Describe the etiology, clinical features and principles of management of disorders of adrenal gland	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU23.3	Describe the clinical features, principles of investigation and management of Adrenal tumors	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU24.1	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU24.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tumours	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	

SU24.3	Describe the principles of investigation and management of Pancreatic disorders including pancreatitis and endocrine tumors.	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
Topic 25: Breast Number of competencies: (05) Number of competencies that require certification: (NIL)							
SU25.1	Describe applied anatomy and appropriate investigations for breast disease	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU25.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the Breast	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skillassessment	
SU25.3	Describe the etiopathogenesis, clinical features, Investigations and principles of treatment of benign and malignant tumours of breast.	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU25.4	Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast	A/C	SH	Y	DOAP	Skillassessment	
SU25.5	Demonstrate the correct technique to palpate the breast for breast swelling in a mannequin or equivalent	S	SH	Y	DOAP	Skillassessment	
Topic 26: Cardio-thoracic General Surgery- Chest - Heart and Lungs Number of competencies: (04) Number of competencies that require certification: (NIL)							
SU26.1	Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases	K	K	Y	LGT,SGT	Written/Vivavoce	
SU26.3	Describe the clinical features of mediastinal diseases and the principles of management	K	K	Y	LGT,SGT	Written/Vivavoce	
SU26.4	Describe the etiology, pathogenesis, clinical features of tumors of lung and the principles of management	K	K	Y	LGT,SGT	Written/Vivavoce	
SU27.1	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skillassessment	
SU27.2	Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease	S	SH	Y	DOAP	Skillassessment	
SU27.3	Describe clinical features, investigations and principles of management of vasospastic disorders	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU27.4	Describe the types of gangrene and principles of amputation	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU27.5	Describe the applied anatomy of venous system of lower limb	K	K	Y	LGT,SGT	Written/Vivavoce	

SU27.6	Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU27.7	Describe pathophysiology, clinical features, investigations and principles of management of Lymphedema, lymphangitis and Lymphomas	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU27.8	Demonstrate the correct examination of the lymphatic system	S	SH	Y	DOAP, Bedside clinic	Skillassessment	
Topic 28: Abdomen Number of competencies: (18) Number of competencies that require certification: (NIL)							
SU28.1	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	S	SH	Y	DOAP, Bedside clinic	Skillassessment	
SU28.3	Describe causes, clinical features, complications and principles of management of peritonitis	K	K	Y	LGT,SGT, Bedsideclinic	Written/Vivavoce	
SU28.4	Describe pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors	K	K	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.5	Describe the applied Anatomy and physiology of esophagus	K	K	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.6	Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus	K	K	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.7	Describe the applied anatomy and physiology of stomach	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU28.8	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophicpyloricstenosis, Peptic ulcer disease, Carcinoma stomach	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	S	SH	Y	DOAP, Bedside clinic	Skillassessment	
SU28.10	Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.11	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	

SU28.12	Describe the applied anatomyofbiliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.13	Describe the applied anatomy of small and large intestine	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.14	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce	
SU28.15	Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications.	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU28.16	Describe applied anatomy including congenital anomalies of the rectum and anal canal	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU28.17	Describe the clinical features, investigations and principles of management of common anorectal diseases	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan	S	SH	Y	Bedsideclinic,DOAP, SGT	Skillassessment	
Topic 29: Urinary System Number of competencies: (11) Number of competencies that require certification: (NIL)							
SU29.1	Describe the causes, investigations and principles of management of Hematuria	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.2	Describe the clinical features, investigations and principles of management of congenital anomalies of genito urinary system	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.4	Describe the clinical features, investigations and principles of management of hydronephrosis	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.5	Describe the clinical features, investigations and principles of management of renal calculi	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.6	Describe the clinical features, investigations and principles of management of renal tumours	K	KH	Y	LGT,SGT	Written/Vivavoce	

SU29.7	Describe the principles of management of acute and chronic retention of urine	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.8	Describe the clinical features, investigations and principles of management of bladder cancer	K	KH	Y	LGT,SGT	Written/Vivavoce	
SU29.9	Describe the clinical features, investigations and principles of management of disorders of prostate	K	KH	Y	LGT,SGT	Written/Vivavoce/ Skill assessment	
SU29.10	Demonstrate a digital rectal examination of the prostateina mannequin or equivalent	S	SH	Y	DOAP	Skillassessment	
SU29.11	Describe clinical features, investigations and management of urethral strictures	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
Topic 30: Penis, Testis and scrotum		**Number of competencies: (06)**			**Number of competencies that require certification: (NIL)**		
SU30.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinoma penis.	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU30.2	Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU30.3	Describe the applied anatomy clinical features, investigations and principles of management of epidydimo-orchitis	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU30.4	Describe the applied anatomy clinical features, investigations and principles of management of varicocele	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU30.5	Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	
SU30.6	Describe classification, clinical features, investigations and principles of management of tumours of testis	K	KH	Y	LGT,SGT, Demonstration	Written/Vivavoce/ Skill assessment	

OPHTHALMOLOGY(CODE:OP)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OPHTHALMOLOGY (Topics:10, Competencies: 60)							
Topic 1: Visual Acuity Assessment		**Number of Competencies: (05)**	**Number of competencies that require certification : (NIL)**				
OP1.1	Describe the physiology of vision, optics of eye and anatomy of visual pathway.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP1.2	Define,classify and describe the types and methods of correcting refractive errors.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP1.3	Demonstrate the steps in performing the visualacuity assessment for distance vision ,near vision, colour vision,the pinhole test and the menace and blink reflexes	S	SH	Y	DOAP, LGT	Skillassessment / Logbook	
OP1.4	Enumerate the indications and describe the principlesofrefractive surgery	K	KH	Y	LGT,SGT	Written/Viva voce	
OP1.5	Define Amblyopia, enumerate the types of Amblyopia and describe the prevention and treatment of refractive Amblyopia.	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 2: Lids and Adnexa, Orbit		**Number of Competencies: (08)**	**Number of competencies that require certification: (NIL)**				
OP2.1	Describe and discuss the aetiology and clinical features, investigations and treatment of HordeolumexternumHordeoluminternum, Ectropion, Entropion, Lagophthalmos, Blepharitis, Preseptal cellulitis.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP2.2	Demonstrate under supervision, the clinical procedure performed- Bell's phenomenon, Ptosis evaluation, Massage technique in Congenital Dacryocystitis, Epilation.	S	SH	Y	DOAP	Skillassessment	
OP2.3	Describe the aetiology, clinical presentation, complications and management of Thyroid eye disease	K	KH	Y	DOAP, LGT	Skillassessment	
OP2.4	Describe the aetiology, clinical presentation. Discuss the complications and management of orbital cellulitis	K	KH	Y	LGT,SGT	Written/Viva voce	
OP2.5	Describetheclinical features onocular examination and management of a patient with cavernous sinus thrombosis	K	KH	Y	LGT,SGT	Written/Viva voce	
OP2.6	Enumerate the causes and describe the differentiating features, and clinical features and management of proptosis	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OP2.7	Classification and clinical presentation of various types of orbital tumours	K	KH	Y	LGT,SGT	Written/Viva voce	
OP2.8	Describe the investigations, management, indications for referral of Orbital tumours.	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 3: Conjunctiva Number of Competencies (07) Number of competencies that require certification: (NIL)							
OP3.1	Demonstrate history taking in a patient with 'Red eye', Enumerate the causes for red eye.	S	SH	Y	DOAP	SkillAssessment	
OP3.2	Describe the etiopathogenesis, clinical features and treatment of acute bacterial and viral conjunctivitis.	K	KH	Y	LGT, SGT	SkillAssessment	
OP3.3	Enumerate the causes for chronic conjunctivitis. Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complicationsand management of trachoma.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP3.4	Enumerate the causes for allergic conjunctivitis. Describe the aetiology pathophysiology, ocular features, complications and management of vernal catarrh.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP3.5	Describe the aetiology, pathophysiology, ocular features, differential diagnosis, complicationsand management of pterygium	K	KH	Y	LGT,SGT	Written/Viva voce	
OP3.6	Demonstrate correct technique of removal of foreign body from the eye in a simulated environment	S	SH	y	DOAP Session	Skill assessment	
OP3.7	Demonstrate under supervision the technique of instillation of eye drops and counselling of patients you put on topical ocular medications	S	SH	Y	DOAP	Skill assessment	
Topic 4: Corneas Number of Competencies: (10) Number of competencies that require certification: (NIL)							
OP4.1	Describe the applied anatomy and physiology of cornea and the factors maintaining corneal transparency	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.2	Enumerate various congenital anomalies and inflammations of cornea.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.3	Enumerate the differential diagnosis of corneal ulcer (infective Keratitis) and describe the aetiopathogenesis, clinical features and management of each type of infective keratitis.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.4	Identify corneal opacity and different grades of corneal opacity. Enumerate various management modalities of corneal opacity.	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OP4.5	Describe tear film. Enumerate the causes of dry eyes and describe the clinical features and management of dry eyes	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.6	Define blindness. Enumerate the causes of corneal blindness	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.7	Enumeratethetypes and the indications of Keratoplasty.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.8	Describe the importance of eye donation and eye banking and enumerate the various protocols involved in eye donation and eye banking.	S	SH	Y	DOAP	Skillassessment	
OP4.9	Identify corneal foreign body and demonstrate techniques of removal of corneal foreign body in simulated environment.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP4.10	Counselpatientsandfamily in a simulated environment about eye donation and teach them how to preserve the eye in the deceased till enucleation is done.	A/C	SH	Y	DOAP	Skillassessment	
Topic 5: Sclera Number of competencies: (02) Number of competencies that require certification : (NIL)							
OP5.1	Describe the etiopathogenesis, classification, clinical features, complications and management of episcleritis.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP5.2	Enumerate the systemic conditions associated with episcleritis and scleritis, indications for their referral.	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 6: Iris and Anterior chamber Number of Competencies (4) Number of competencies that require certification: (NIL)							
OP6.1	Define Uveitis. Describe the anatomical classification of Uveitis. Describe the clinical features of Iridocyclitis. Distinguish granulomatous iridocyclitis from non-granulomatousiridocyclitis.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP6.2	Describe the complication of iridocyclitis, investigations and treatment of iridocyclitis.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP6.3	Distinguish Hyphema from Hypopyon clinically and enumerate their causes.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP6.4	Enumerate systemic conditions associated with Uveitis. Counsel the patients with uveitis in a simulated environment	K, A/C	KH/SH	Y	LGT,SGT, DOAP	Written/Viva voce	
Topic 7: Glaucoma Number of Competencies: (05) Number of competencies that require certification: (NIL)							
OP7.1	Describe the etiopathogenesis , clinical features and management of congenital glaucoma.	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OP7.2	Describe the etiopathogenesis , clinical features and management of primary open angle glaucoma.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP7.3	Describe the etiopathogenesis , clinical features and management of primary angle closure glaucoma.	S	SH	Y	DOAP	Skillassessment	
OP7.4	Enumerate the causes of secondary glaucoma.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP7.5	Counsel the patient with glaucoma regarding the treatment modalities complications with treatment and prognosis in a simulated environment.	A/c	SH	Y	DOAP	Skillassessment	
Topic 8: Lens		**Number of Competencies (06)**		**Number of competencies that require certification : (NIL)**			
OP8.1	Describe the surgical anatomy of lens	K	KH	Y	LGT,SGT	Written/Viva voce	
OP8.2	Describe the etiopathogenesis, etiological classification, stages of maturation and complications of cataract.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP8.3	Demonstrate the pre operative evaluation and counselling of a patient posted for cataract surgery.	S	SH	Y	DOAP	Skill assessment	
OP8.4	Enumerate the different types of cataract surgery. Enumerate the different ocular anaesthesia techniques. Describe the steps of extra capsular cataract surgery, enumerate the intra operative and post operative complications of ECCE, discuss the post operative treatment.	S	KH	Y	LGT,SGT	Written/Viva voce	
OP8.5	Elicit history and clinical signs in a case of aphakia. Discuss the management of aphakia	K	SH	Y	LGT,SGT, DOAP	Skill Assessment/ Logbook documentation Viva Voce	
OP8.6	Participation of IMG in the team for cataract surgery	S	SH	Y	DOAP	Skill assessment	
Topic 9: Retina&opticNerve		**NumberofCompetencies(05)**		**Numberofcompetenciesthatrequirecertification:(NIL)**			
OP9.1	Demonstrate the technique of direct and indirect ophthalmoscopy. Describe the fundoscopic features of normal retina.	S	SH	Y	LGT,SGT,DOAP	Written/Viva voce, Skill assessment	
OP9.2	Describe the etiopathogenesis, clinical features, management and screening protocol for Diabetic Retinopathy.	K	KH	Y	LGT,SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OP9.3	Discuss the etiopathogenesis, clinical features and management of vascular occlusions of retina.	K	KH	Y	LGT,SGT	Written/ Viva Voce	
OP9.4	Discuss the etiopathogenesis, clinical features and management of Hypertensive retinopathy, retinopathy of prematurity, Eales disease , retinal detachment, central serous retinopathy, cystoid macular edema, age related macular degeneration, retinitis pigmentosa and Retinoblastoma.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP9.5	Describe and discuss the correlative anatomy,aetiology,clinical manifestations, diagnostic tests, imaging and treatment of diseases of the optic nerve and visual pathway	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 10:Miscellaneous		**NumberofCompetencies(07)**			**Numberofcompetenciesthatrequirecertification:(01)**		
OP10.1	Demonstrate the correct technique to examine extraocular movements (Uniocular & Binocular)	S	P	Y	DOAP	SkillAssessment	5
OP10.2	Classify, enumerate the types, methods of diagnosis and indications for referral in a patient with heterotropia/ strabismus	K	KH	Y	LGT,SGT	Written/Vivavoce/ skill assessment	
OP10.3	Describe the role of refractive error correction in a patient with headache and enumerate the indications for referral	K	KH	Y	LGT,SGT	Written/Viva voce	
OP10.4	Describe the classifications, causes, ocular manifestations and management of vitamin A deficiency. Indications for referral.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP10.5	Enumerate the indications for enucleation, evisceration and exenteration.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP10.6	Classify ocular injuries, describe their primary management. Indications for referral.	K	KH	Y	LGT,SGT	Written/Viva voce	
OP10.7	Enumerate the causes of Blindness and Vision impairment. Discuss National Program for Control of Blindness (NPCB, including vision 2020)	K	KH	Y	LGT,SGT	Written/Viva voce	

OTORHINOLARYNGOLOGY (ENT) (CODE: EN)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OTORHINOLARYNGOLOGY (ENT) (Topics:4, Competencies: 63)							
Topic 1: Anatomy and Physiology of ear, nose, throat, head & neck Number of competencies:(02) Number of competencies that require certification:(Nil)							
EN1.1	Describe the Anatomy & physiology of ear, nose, throat, head & neck	K	KH	Y	LGT, SGT.	Written/ Viva voce	
EN1.2	Describe the pathophysiology of common diseases in ENT like Chronic Otitis Media,,Otosclerosis, Adeno tonsillitis ,Nasal polyposis .	K	KH	Y	LGT, SGT.	Written/ Viva voce	
Topic 2: Clinical Skills		**Number of competencies: (12)**			**Number of competencies that require certification:(5)**		
EN2.1	Elicit document and present an appropriate history in a patient presenting with an ENT complaint	K/S/A/C	SH	Y	LGT, SGT, Demonstration	Skill assessment	
EN2.2	Demonstrate the correct use of conventional methods including head lamp in the examination of ear, nose and throat, the correct technique of examination of the nose & paranasal sinuses including the use of nasal speculum, examination of the throat including the use of a tongue depressor, examination of neck including elicitation of laryngeal crepitus	S	SH	Y	DOAP	Skill assessment/ OSCE	3
EN2.3	Demonstrate the correct technique of examination of the ear including Otoscopy and demonstrate the correct technique of performance and interpretation of tuning fork tests .	K/S/A	SH	Y	DOAP, Bedside clinic	Skill assessment/ OSCE	3
EN 2.4	Describe the correct technique to perform and interpret pure tone audiogram & impedance audiogram	K/S	SH	Y	Clinical demonstration.	Skill assessment	3
EN 2.5	Demonstrate the correct technique of otoscopy , to hold visualize and assess the mobility of the tympanic membrane , interpret and diagrammatically represent the findings.	K/S/A	SH	Y	Clinical, Demonstration	Written/ Viva voce/ Skill assessment	3
EN 2.6	Choose correctly and interpret radiological, microbiological & histological investigations relevant to the ENT disorders	K/S	SH	Y	LGT, SGT, Demonstration.	Written/ Viva voce/ Skill assessment	
EN 2.7	Identify and describe the use of common instruments used in ENT surgery. Nose: FESS, Septoplasty, Nasal Bone Reduction Ear Tympanoplasty, mastoidectomy, Myringotomy Throat: Adenotonsillectomy, Foreign Body Removal from Airway and Food passage, Tracheostomy	K	SH	Y	Demonstration, Bedside clinic .	Skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
EN 2.8	Enumerate suspect high-risk patients and risk factors associated with and identify by clinical examination malignant & pre- malignant Ent diseases	K/S	SH	Y	LGT, SGT, Demonstration	Written/ Viva voce/ Skill assessment	
EN 2.9	Counsel and administer informed consent to patients and their families in a simulated environment for Ear: Tympanoplasty, mastoidectomy, Myringotomy Nose: FESS, Septoplasty, Nasal Bone Reduction Throat: Adenotonsillectomy, Foreign Body Removal from Airway and Food passage, Tracheostomy.	S/A/C	SH	Y	DOAP, Bedside clinic	Skill assessment	
EN 2.10	Identify, resuscitate and manage ENT emergencies in a simulated environment (including tracheostomy, anterior nasal packing, removal of foreign bodies in ear, nose, throat, upper respiratory tract and food passages).	K/S/A	SH	Y	DOAP, Bedside clinic	Skill assessment	3
EN 2.11	Demonstrate the correct technique to instill topical medications into the ear, nose and throat in a simulated environment.	K/S	SH	Y	DOAP, Bedside clinic	Skill assessment.	
EN 2.12	Describe the national programs for prevention of deafness, cancer, noise & environmental pollution and participate actively in deafness week and world hearing day	K	KH	Y	LGT, SGT	Written/ Viva voce	
Topic 3: Diagnostic and Therapeutic competencies in ENT		**Number of competencies:(01) Number of competencies that require certification:(Nil)**					
EN3.1	Observe and describe the indications for and steps involved in the performance of Oto-microscopic examination.	S	KH	N	LGT, SGT, Demonstration	Written/ Viva voce	
EN3.2	Observe and describe the indications for and steps involved in the performance of Diagnostic Nasal Endoscopy.	S	KH	N	LGT, SGT, Demonstration	Written/ Viva voce	
EN3.3	Observe and describe the indications for and steps involved in the performance of Rigid/Flexible Laryngoscopy	K/S	KH	N	LGT, SGT, Demonstration	Written/ Viva voce	
Topic 4: Management of Diseases of Ear, nose and throat		**Number of competencies:(46) Number of procedures that require certification:(01)**					
EN 4.1	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Otalgia.	K/S	SH	Y	LGT, SGT,DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	

EN 4.2	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of diseases of the external Ear.	K/S	SH	Y	LGT, SGT,DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
EN 4.3	Elicit document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of ASOM	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.4	Elicit document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of OME	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.5	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of ear discharge.	K/S	SH	Y	LGT, SGT, DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	
EN 4.6	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of mucosal type of CSOM.	K/S	SH	Y	LGT, SGT, DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	
EN 4.7	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of squamosal type of CSOM.	K/S	SH	Y	LGT, SGT, DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	
EN 4.8	Describe the clinical features, choose the correct investigations and the principles of management of complications of CSOM.	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.9	Demonstrate the correct technique for wax removal from the ear in a simulated environment	S	SH	Y	Clinical demonstration / DOAP	Skill assessment	3
EN 4.10	Observe and describe the indications for and steps involved in myringotomy and tympanoplasty	S	KH	Y	Clinical , demonstration	Written/ Viva voce	
EN 4.11	Observe and describe the indications for and steps involved in mastoidectomy	S	KH	Y	Clinical, demonstration	Written/ Viva voce	
EN 4.12	Describe the clinical features, investigations and principles of management of Acoustic neuroma	K	KH	Y	LGT, SGT	Written/ Viva voce	

EN 4.13	Describe the clinical features, investigations and principles of management of Otosclerosis	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
EN 4.14	Describe the clinical features, investigations, and principles of management of Conductive Hearing Loss and Sensorineural hearing loss including Sudden Sensorineural Hearing Loss and Noise Induced Hearing Loss.	K	KH	Y	LGT, SGT	Written/Viva voce	
EN 4.15	Describe the anatomy of eustachian tube and discuss the clinical features, investigations, and management of Eustachian tube disorders.	K	KH	Y	LGT, SGT /Flipped class room	Written/Viva voce	
EN 4.16	Describe the clinical features, investigations, and principles of management of Facial Nerve palsy	K	KH	Y	LGT, SGT, Demonstration	Written/Viva voce/Skill assessment	
EN 4.17	Describe the clinical features, investigations and management of Vertigo and assessment of vestibular functions.	K	KH	Y	LGT, SGT, Demonstration	Written/Viva voce/Skill assessment	
EN 4.18	Describe the clinical features, investigations, and principles of management of Meniere's Disease	K	KH	N	LGT, SGT	Written/Viva voce	
EN 4.19	Describe the clinical features, investigations, and management of Tinnitus.	K	KH	Y	LGT, SGT	Written/Viva voce	
EN 4.20	Describe the clinical features, investigations, and management of Deaf child.	K/S	KH	Y	LGT, SGT	Written/ Viva voce	
EN 4.21	Elicit document and present a correct history demonstrate and describe the Causes, choose the correct investigations and describe the principles of management of Nasal Obstruction.	K/S	SH	Y	LGT, SGT, Demonstration	Written/ Viva voce/ Skill assessment	
EN 4.22	Describe the clinical features, investigations and management of DNS and observe and discuss the indications for the steps in septoplasty.	K/S	KH	Y	Clinical demonstration	Written/ Viva voce	
EN 4.23	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Adenoids	K/S	SH	Y	LGT, SGT, DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	

EN 4.24	Elicit document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of Allergic Rhinitis	K/S	SH	Y	LGT, SGT, Demonstration	Written/ Viva voce /skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
EN 4.25	Elicit document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of Vasomotor Rhinitis	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.26	Elicit, document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Rhinitis	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.27	Elicit, document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of Nasal Polyps	K/S	SH	Y	LGT, SGT, Demonstration	Written/ Viva voce /skill assessment	
EN 4.28	Elicit document and present a correct history, demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Epistaxis	K/S	SH	Y	LGT, SGT, DOAP, Bedside clinic	Written/ Viva voce/ Skill assessment	
EN 4.29	Describe the clinical features, choose the correct investigations and describe the principles of management of OBSTRUCTIVE SLEEP APNEA.	K/S	SH	N	LGT, SGT	Written/ Viva voce/	
EN 4.30	Describe the clinical features, investigations and principles of management of Head and Neck trauma.	K/S	KH	N	LGT, SGT.	Written/ Viva voce	
EN 4.31	Describe the clinical features, investigations and principles of management of nasopharyngeal Angiofibroma	K	KH	Y	LGT, SGT.	Written/ Viva voce	
EN 4.32	Elicit document and present a correct history demonstrate and describe the clinical features, choose the correct investigations and describe the principles of management of Acute & Chronic Sinusitis and its Complications	K/S	SH	Y	LGT, SGT, Demonstration	Written/ Viva voce/ Skill assessment	
EN 4.33	Describe the clinical features, investigations and principles of management of Tumours of Nose, Nasopharynx and para nasal sinus	K	KH	Y	LGT, SGT,	Written/ Viva voce	
EN 4.34	Describe the clinical features, investigation and management of granulomatous diseases of nose	K	KH	N	LGT, SGT	Written/ viva voce	

EN 4.35	Describe the clinical features, investigations and principles of management of diseases of the Salivary glands	K	KH	N	LGT, SGT	Written/ Viva voce	
EN 4.36	Describe the clinical features, investigations and principles of management of Deep Neck space Infection	K	KH	Y	LGT, SGT	Written/ Viva voce.	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
EN 4.37	Elicit document and present a correct history describe the clinical features, choose the correct investigations and describe the principles of management of dysphagia	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.38	Elicit document and present a correct history, describe the clinical features, choose the correct investigations , complications and describe the principles of management of Acute & Chronic Tonsillitis	K/S	SH	Y	LGT, SGT, Bedside clinic	Written/ Viva voce/Skill assessment	
EN 4.39	Observe and describe the indications for and steps involved in a tonsillectomy / adenoidectomy and its complications	S	KH	Y	Clinical, demonstration	Written/ Viva voce	
EN 4.40	Elicit, document and present a correct history, describe the clinical features, choose the correct investigations and describe the principles of management of hoarseness of voice	K/S	SH	Y	LGT, SGT	Written/ Viva voce	
EN 4.41	Describe the clinical features, investigations and principles of management of Benign lesion of larynx, Acute & Chronic inflammation of larynx, laryngeal paralysis.	K/S	KH	Y	LGT, SGT	Written/ Viva voce	
EN 4.42	Describe the clinical features, investigations and principles of management of Malignancy of the Larynx & Hypopharynx.	K	KH	Y	LGT, SGT /Flipped classroom	Written/ Viva voce	
EN 4.43	Describe the clinical features, investigations and principles of management of Stridor	K	KH	Y	LGT, SGT	Written/ Viva voce	
EN 4.44	Observe and describe the indications for and steps involved in tracheostomy and the care of the patient with a tracheostomy	K	KH	Y	Clinical, Demonstration	Written/ Viva voce	
EN 4.45	Describe the Clinical features, Investigations and principles of management of diseases of Oesophagus	K	KH	N	LGT, SGT	Written/ Viva voce	
EN 4.46	Describe the clinical features, investigations and principles of management of HIV manifestations of the ENT	K	KH	N	LGT, SGT /Flipped classroom	Written/ Viva voce	

OBSTETRICS&GYNAECOLOGY(CODE:OG)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OBSTETRICS & GYNAECOLOGY (Topics:38, Competencies: 141)							
Topic 1: Demographic and Vital Statistics		**Number of competencies:(05)**			**Number of competencies that require certification:(NIL)**		
OG1.1	Define and discuss birthrate, maternal mortality and morbidity and maternal near miss	K	KH	Y	LGT,SGT	Written	
OG1.2	Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit	K	KH	Y	LGT,SGT	Written	
OG1.3	Define and discuss still birth and abortion	K	KH	Y	LGT,SGT	Written	
OG1.4	Define and discuss caesarean audit according to modified Robsons classification	K	KH	Y	LGT,SGT	Written	
OG 1.5	Describe and discuss the national programs relevant to Obstetrics & Gynaecology including JSY, JSSK, birth & death registration, anaemia mukt bharat, SUMAN	K	KH	Y	LGT,SGT	Written	
Topic 2:Anatomy of the female reproductive tract (Basic anatomy and embryology)		**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**		
OG2.1	Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology.	K	KH	Y	LGT,SGT, SDL	Written/Skill station	
Topic 3:Physiology of conception		**Number of competencies:(01)**			**Numberofcompetenciesthatrequirecertification:(NIL)**		
OG3.1	Describe the physiology of ovulation,menstruation,fertilization,implantation and gametogenesis.	K	K	Y	LGT,seminars, SDL	Written	
Topic 4:Development of the fetus and the placenta		**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**		
OG4.1	Describe and discuss the basic embryology of fetus, factors influencing fetal growth and development, anatomy and physiology of placenta	K	K	Y	LGT,SGT, SDL	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 5:Preconception counselling	**Number of competencies:(02)**				**Number of competencies that require certification:(NIL)**		
OG5.1	Describe, discuss and identify pre-existing medical disorders and discuss their management DM, HT, renal disorders, SLE, obesity, epilepsy & heart disease	K/S	SH	Y	LGT, Bedsideclinics	Written/ clinicalassessment	
OG5.2	Determine maternal high risk factors and verify immunization status	K/S	SH	Y	LGT, Bedsideclinics, SDL	Written/ clinicalassessment	
Topic 6:Diagnosis of pregnancy	**Number of competencies:(01)**				**Number of competencies that require certification:(NIL)**		
OG6.1	Describe, discuss and demonstrate the clinical features of pregnancy, derive and discuss its differential diagnosis,elaborate the principles underlying and interpret pregnancy tests.	S	SH	Y	LGT,SGT, Bedsideclinics	Written/ Clinical assessment/Vivavoce	
Topic 7:Maternal Changes in pregnancy	**Number of competencies:(01)**				**Number of competencies that require certification:(NIL)**		
OG7.1	Describe and discuss the changes in the genital tract, breast, cardiovascular system, respiratory, haematology, renal and gastro intestinal system in pregnancy	K	KH	Y	LGT,seminars, SDL	Written	
Topic 8:Antenatal Care	**Number of competencies:(10)**				**Number of competencies that require certification:(NIL)**		
OG8.1	Enumerate, describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors and concept of inverted pyramid of care	K	KH	Y	SGT, Bedsideclinics,LGT	Written/Vivavoce/Skillassessment	
OG8.2	Elicit document and present an obstetric history including menstrual history , last menstrual period, previous obstetric history, Comorbid conditions, past medical history and surgical history	K/S	SH	Y	SGT, Bedsideclinics,LGT	Written/Vivavoce/Skillassessment	

OG8.3	Describe, demonstrate, document and perform an obstetrical examination including a general and abdominal examination (symphysio- fundal height & abdominal girth) and clinical monitoring of maternal and fetal well-being	K/S	SH	Y	Bed-side clinic, DOAP	Skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number Required to certify P**
OG8.4	Describe and demonstrate clinical monitoring of maternal and fetal well- being including weight gain, DFMC, NST & BPP	K/S	SH	Y	Bedside clinic, DOAP, SGT	Skill assessment/Written /Viva voce	
OG8.5	Describe and demonstrate pelvic assessment & evaluation of CPD in a model	K/S	SH	Y	DOAP	Skill assessment	
OG8.6	Assess and counsel a patient in a simulated environment regarding appropriate nutrition in pregnancy	K/S	SH	Y	DOAP, Bedside clinic	Skill assessment	
OG8.7	Enumerate the indications for and types of vaccination in pregnancy	K	KH	Y	LGT,SGT, SDL	Written/Viva voce	
OG8.8	Enumerate the indications and describe the investigations includingthe use of ultrasound in the initial assessment and monitoring in pregnancy	K	KH	Y	LGT,SGT	Written/Viva voce	
OG 8.9	Describe and discuss causes of still births and their management	K	KH	Y	LGT, small group discussion	Written, viva voce, practical case	
OG8.10	Describe and discuss cases of post caesarean pregnancy and their management	K	KH	Y	LGT, small group discussion	Written, viva voce, practical case	
Topic 9: Complications in early pregnancy		**Number of competencies:(06)**			**Number of competencies that require certification:(NIL)**		
OG9.1	Classify, define and discusses the aetiology and management of abortions including threatened, incomplete, inevitable, missed and Septic abortion	K	KH	Y	LGT,SGT	Written/Viva voce	
OG 9.2	Classify, define and discusses the aetiology and management of Recurrent pregnancy loss	K	KH	Y	LGT,SGT	Written/Viva voce	
OG9.3	Describe the steps and observe/ assist in the performance of an MTP evacuation (medical abortion, eva& MVA)	S	SH	Y	DOAP, Bedside clinic	Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG9.4	Discuss the aetiology, clinical features, differential diagnosis of acute abdomen in early pregnancy (with a focus on ectopic pregnancy) and enumerate the principles of medical and surgical management	K	KH	Y	LGT, SGT	Written/Viva voce	
OG9.5	Discuss the clinical features, laboratory investigations, ultrasonography, differential diagnosis, principles of management and follow-up of gestational trophoblastic neoplasms	K	KH	Y	LGT, SGT	Written/Viva voce	
OG9.6	Describe the etiopathology, impact on maternal and fetal health and principles of management of hyperemesis gravidarum	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 10: Antepartum haemorrhage		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG10.1	Define, classify and describe the aetiology, pathogenesis, clinical features, ultrasonography, differential diagnosis and management of antepartum haemorrhage in pregnancy	K	KH	Y	LGT,SGT, Bedside clinic	Written/Viva voce, clinical exam	
OG10.2	Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management.	K	KH	Y	LGT,SGT, SDL	Written/Viva voce	
Topic 11: Multiple pregnancies		**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**		
OG11.1	Describe the etiopathology, clinical features; diagnosis andinvestigations, complications, principles of management of multiple pregnancies	K	KH	Y	LGT, SGT, Bedside clinics	Written/ OSCE/Clinical assessment/Viva voce	
Topic 12: Medical Disorders in pregnancy		**Number of competencies:(11)**			**Number of competencies that require certification:(NIL)**		
OG12.1	Define, classify and describe the etiology and pathophysiology, early detection, investigations; principles of management of hypertensive disorders of pregnancy and eclampsia, complications of eclampsia.	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG12.2	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, adverse effects on the mother and foetus and management during pregnancy and labor, and complications of anemia in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG12.3	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on mother and foetus and the management during pregnancy and labor, and complications of diabetes in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG12.4	Define, classify and describe the etiology, pathophysiology, diagnosis, investigations, criteria, adverse effects on mother and foetus and the management during pregnancy and labor, and complications of heart diseases in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG12.5	Describe the clinical features, detection, effect of pregnancy on thediseaseandimpactofthediseaseonpregnancycomplicationsandmanagementofurinarytractinfectionsinpregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Skill assessment/ Skill assessment	
OG12.6	Describe the clinical features, detection, effect of pregnancy on disease and impact of the disease on pregnancy complications and management of liver disease in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG12.7	Describe and discuss screening, risk factors, management of mother and new born with HIV	K	KH	Y	LGT,SGT, Bedside clinics, SDL	Skill assessment	
OG12.8	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of iso-immunization in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG 12.9	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of thyroid disorders in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce	
OG 12.10	Describe the mechanism, prophylaxis, fetal complications, diagnosis and management of gynaecological & surgical disorders in pregnancy	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG12.11	Describe and discuss causes, clinical features, diagnosis, investigations; monitoring of fetal well- being, including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation	K,S	KH	Y	LGT,SGT, Bedsideclinics	Written/ skill assessment/ Viva voce	
Topic 13:Labour		**Number of competencies:(08)**			**Number of competencies that require certification:(01)**		
OG 13.1	Enumerate and discuss the diameters of maternal pelvis and types	K	KH	Y	LGT,SGT, DOAP, Bedside clinic	Written/Viva voce/ Skill assessment	
OG 13.2	Discuss the mechanism of normal labor	K/S	SH	Y	SGT, skill lab	OSCE	
OG13.3	Enumerate and discuss the physiology of normal labor, mechanism of labor in occipito-anterior presentation; monitoring of labor including partogram and labour care guide; conduct of labor, pain relief; principles of induction and acceleration of labor; management of third stage of labor.	K/S	KH	Y	LGT, SGT (with models /videos/AV aids, etc.)	Written/Clinical assessment/viva voce	
OG13.4	Define, describe the causes, pathophysiology, diagnosis, investigations and management of preterm labor, PROM and post-dated pregnancy	K/S	KH	Y	LGT, SGT, Bedside clinics	Written/ OSCE/ Clinical assessment /Viva voce	
OG13.5	Observe/assist in the performance of an artificial rupture of membranes	S	SH	N	DOAP, Bedside clinic	Skill assessment	
OG13.6	Demonstrate the stages of normal labor in a simulated environment /mannequin	S	SH	Y	DOAP	Skillassessment	
OG13.7	Observe and assist the conduct of a normal vaginal delivery	S	P	Y	DOAP	Logbook	10
OG 13.8	Discuss and describe components of respectful maternity care	K/S	KH	Y	LGT, SGT, Bedsideclinics	Written/ OSCE/Clinical assessment/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 14: Abnormal Labour		**Number of competencies:(03)**			**Number of competencies that need certification:(NIL)**		
OG14.1	Define and describe obstructed labor, its clinical features; prevention; and management	K	KH	Y	LGT,SGT, DOAP, Bedside clinic	Written/Viva voce/ Skill assessment	
OG14.2	Describe and discuss rupture uterus, causes, diagnosis and management.	K	KH	Y	LGT,SGT, DOAP, Bedside clinic	Written/Viva voce/ Skill assessment	
OG14.3	Describe and discuss the classification; diagnosis; management of abnormal labor (occipitoposterior position, breech, face, transverse lie)	K	KH	Y	LGT, SGT, Bedside clinics	Written/ skill assessment	
Topic 15: Operative obstetrics		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG15.1	Enumerate and describe the indications and steps of common obstetric competencies, technique and complications: Episiotomy, vacuum extraction; low forceps; Caesarean section, assisted breech delivery; external cephalic version; cervical cerclage	S	KH	Y	LGT, SGT, seminars	Written/ skill assessment	
OG15.2	Observe and assist in the performance of an episiotomy and demonstrate the correct suturing technique of an episiotomy in a simulated environment. Observe /Assist in operative obstetrics cases –including-CS, Forceps, vacuum extraction, and breech delivery	S	SH	Y	DOAP, Bedside clinic	Skill assessment	
Topic 16: Complications of the third stage		**Number of competencies:(04)**			**Number of competencies that require certification:** (01)		
OG16.1	Enumerate and discuss causes, prevention, diagnosis, management, appropriate use of blood and blood products in post-partum haemorrhage	K/S	KH SH	Y	LGT,SGT, Bedside clinics	Written/ skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG 16.2	Describe and demonstrate different techniques used to manage PPH including bimanual and aortic compression, intrauterine balloon tamponade, non-pneumatic anti shock garment Application	K/S	P	Y	SGT, skill lab	Written/ skill assessment	3
OG16.3	Describe and discuss uterine inversion– causes, prevention, diagnosis and management.	K	KH	Y	LGT, SGT, Bedside clinics	Written/Viva voce	
OG16.4	Describe and discuss causes, clinical features, diagnosis, investigations; monitoring of fetal well- being, including ultrasound and fetal Doppler; principles of management; prevention and counselling in intrauterine growth retardation	K/S	KH	Y	LGT,SGT, Bedside clinics, SDL	Written/ skill assessment/ Viva voce	
Topic 17: Lactation		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
OG17.1	Describe and discuss the physiology of lactation & discuss baby friendly hospital initiatives	K	KH	Y	LGT,SGT	Written/Viva voce	
OG17.2	Counsel in a simulated environment, care of the breast, importance and the technique of breast-feeding	S/A/C	SH	Y	DOAP	Skill assessment	
OG17.3	Describe and discuss the clinical features, diagnosis and management of mastitis and breast abscess	K	KH	Y	LGT,SGT	Written/Viva voce	
Topic 18:Care of the newborn		**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
OG18.1	Describe and discuss the assessment of maturity of the newborn, diagnosis of birth asphyxia, principles of resuscitation, common problems.	K	KH	Y	LGT, SGT	Written/Viva voce	
OG18.2	Demonstrate the steps of neonatal resuscitation in a simulated environment	S	SH	Y	DOAP	Skill assessment	
OG18.3	Describe and discuss the diagnosis of birth asphyxia	K	KH	Y	LGT, SGT	Written/Viva voce	
OG18.4	Describe the principles of resuscitation of the new-born and enumerate the common problems encountered	K	KH	Y	LGT, SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 19: Normal and abnormal puerperium		**Number of competencies: (04)**			**Number of competencies that require certification:(01)**		
OG19.1	Describe and discuss the physiology of puerperium, its complications, diagnosis and management; counselling for contraception, puerperal sterilization	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce	
OG19.2	Counsel in a simulated environment, contraception and puerperal Sterilisation	S/A/C	SH	Y	DOAP	Skill assessment	2
OG19.3	Observe/assist in the performance of tubal ligation	S	KH	Y	DOAP, intraoperative	Skill assessment	
OG19.4	Describe & discuss PPIUCD programme	K	K/KH	Y	LGT, SGT	Written/Viva voce	
Topic 20: Medical termination of pregnancy		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
OG20.1	Enumerate the indications and describe and discuss the legal aspects, indications, methods for first and second trimester MTP; complications and management of complications of Medical Termination of Pregnancy	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo Medical Termination of Pregnancy	S/A/C	SH	Y	DOAP	Skill assessment	
OG20.3	DiscussPre- conception and PreNatal Diagnostic Techniques (PC & PNDT) Act 1994 & its amendments	K	K/KH	Y	LGT, SGT, SDL	Written/Viva voce	
Topic 21: Contraception		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including OCs, male contraception, emergency contraception and IUCD	K	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG21.2	Enumerate the indications for, describe the steps in and insert and remove an intrauterine device in a simulated environment	S	SH	Y	DOAP	Skill assessment	
Topic: Vaginal discharge		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG22.1	Describe the clinical characteristics of physiological vaginal discharge.	K	KH	Y	LGT, SDL	Written	
OG22.2	Describe and discuss the etiology (with special emphasis on Candida, T. vaginalis, bacterial vaginosis), characteristics, clinical diagnosis, investigations, genital hygiene, management of common causes and the syndromic management	K	KH	Y	LGT, Bedside clinics, SDL	Written/Viva voce/ Skill assessment	
Topic 23: Normal and abnormal puberty		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
OG23.1	Describe and discuss thephysiology of puberty, features of abnormal puberty, common problems and their management	K	KH	Y	LGT, SGT, Bedside clinics, SDL	Written/Viva voce	
OG23.2	Enumerate the causes of delayed puberty. Describe the investigation and management of common causes	K	KH	Y	LGT, SGT	Written/Viva voce	
OG23.3	Enumerate the causes of precocious puberty	K	K	N	LGT, SGT	Written/Viva voce	
Topic 24: Abnormal uterine bleeding		**Number of competencies:(01)**			**Number of competencies that require certification: (NIL)**		
OG24.1	Define, classify and discuss abnormal uterine bleeding, its aetiology, clinical features, investigations, diagnosis and management	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 25: Amenorrhea		**Number of competencies: (01)**			**Number of competencies that require certification:(NIL)**		
OG25.1	Describe and discuss the causes of primary and secondary amenorrhea, its investigation and the principles of management.	K	KH	Y	LGT, SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 26: Genital injuries and fistulae		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG26.1	Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae	K	KH	N	LGT, SGT	Written/Viva voce	
OG26.2	Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae	K	KH	N	LGT, SGT	Written/Viva voce	
Topic 27: Genital infections		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
OG27.1	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of sexually transmitted infections (concept of syndromic management)	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
OG27.2	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long-term implications of genital tuberculosis	K	KH	Y	LGT, SGT	Written/Viva voce	
OG27.3	Describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations, management and long term implications of Pelvic Inflammatory Disease	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 28: Infertility		**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
OG28.1	Describe and discuss the common causes, pathogenesis, clinical features, differential diagnosis; investigations; principles of management of infertility – methods of tubal patency, Ovulation induction, assisted reproductive techniques	K	KH	Y	LGT, seminars, Bedside clinics, SDL	Written/Viva voce	
OG28.2	Enumerate the assessment and restoration of tubal patency	K	K	N	LGT, seminars, Bedside clinics, SDL	Written/Viva voce	
OG28.3	Describe the principles of ovulation induction	K	KH	Y	LGT, seminars, Bedside clinics, SDL	Written/Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG28.4	Enumerate the various Assisted Reproduction Techniques	K	K	N	LGT, seminars, Bedside clinics, SDL	Written/Viva voce	
Topic 29: Uterine fibroids		**Number of competencies: (01)**			**Number of competencies that require certification:(NIL)**		
OG29.1	Describe and discuss the etiology; pathology; clinical features; differential diagnosis; investigations; principles of management, complications of fibroid uterus	K	KH	Y	LGT, Bedside clinics	Written/ O SCE/ Clinical Assessment /Viva voce	
Topic 30: PCOS and hirsutism		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG 30.1	Describe and discuss the etiopathogenesis; clinical features; differential diagnosis; investigations; management, complications of PCOS	K/A/C	KH	Y	LGT, bedside clinic, SDL	Written/ OSCE / Clinical Assessment /Viva voce	
OG30.2	Enumerate the causes and describe the investigations and management of hyper-androgenism	K	KH	N	LGT	Written/ OSCE/ Clinical Assessment/Viva voce	
Topic 31: Uterine prolapse		**Number of competencies: (01)**			**Number of competencies that require certification:(NIL)**		
OG31.1	Describe and discuss the etiology, classification, clinical features, diagnosis, investigations, principles of management and preventive aspects of prolapse of uterus	K/S	KH	Y	LGT, small group discussion, Bedside clinics	Written/Viva voce/ Skill assessment	
Topic 32: Menopause		**Number of competencies:(02)**			**Number of competencies that require certification:(NIL)**		
OG32.1	Describe and discuss the physiology of menopause, symptoms, prevention, management and the role of hormone replacement therapy.	K	KH	Y	LGT, small group discussion, Bedside clinics	Written/Viva voce	
OG32.2	Enumerate the causes of post-menopausal bleeding and describe its management	K	KH	Y	LGT, small group discussion Bedside clinics	Written/Viva voce/ clinical assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 33: Benign, Pre-malignant (CIN) and Malignant Lesions of the Cervix **Number of competencies that require certification: (0 1)** **Number of competencies:(05)**							
OG33.1	Classify, describe and discuss the etiology, pathology, clinical features, differential diagnosis, investigations and staging of cervical cancer	K/S	KH	Y	LGT,SGT, Bedside clinics	Written/Viva voce/ Skill assessment	
OG33.2	Describe the principles of management including surgery and radiotherapy of and Malignant Lesions of the Cervix	K	KH	Y	LGT, SGT, Bedside clinics, SDL	Written/Viva voce/ Skill assessment	
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment	K/S	SH	Y	DOAP, SDL	Skill assessment	
OG33.4	Enumerate the methods to prevent cancer of cervix including visual inspection with acetic acid (VIA), visual inspection of cervix with Lugol's iodine(VILI),pap smear and colposcopy	K/S	K SH	Y	LGT, SGT, Bedside clinics, SDL	Vivavoce/Written/Skill assessment	3
OG 33.5	Describe the principles of management of benign and premalignant lesions of cervix (Cryotherapy, thermal ablation & LEEP)	K	KH	Y	LGT, small group discussion	Written, viva voce, OSCE	
Topic 34: Benign and malignant diseases of uterus and ovaries. Number of competencies:(06) Number of competencies that require certification:(NIL)							
OG34.1	Describe and discuss aetiology, pathology, staging clinical features, differential diagnosis, investigations, staging laparotomy and principles of management of endometrial cancer	K	KH	Y	LGT, Bedside clinics	Viva voce/Written	
OG34.2	Describe and discuss etiology, pathology, classification, staging of ovarian cancer, clinical features, differential diagnosis, investigations, principal of management including staging laparotomy	K/S	KH	Y	LGT, bedside clinic	Written/OSCE/clinical assessment/ Viva voce	
OG34.3	Describe and discuss etiology, pathology, classification, staging, clinical features, differential diagnosis, investigations and management of gestational trophoblastic disease	K	KH	Y	LGT	Written/OSCE/clinical Assessment/	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG34.4	Operative Gynaecology : Understand and describe the technique and complications:Dilatation & Curettage (D&C); EA- ECC;cervical biopsy;	K/S	SH	Y	Videos on manikins, observe competencies and surgeries in OR	Viva voce/ OSCE	
OG34.5	Operative Gynaecology : Understand and describe the technique and complications of abdominal hysterectomy; myomectomy; surgery for ovarian tumours; staging laparotomy;vaginal hysterectomy including pelvic floor repair; Fothergill's operation, Laparoscopy; hysteroscopy; management of postoperative complications	K/S	KH	Y	Videos on manikins, observe competencies and surgeries in OR	Viva voce, theory	
OG 34.6	Describe and discuss the etiopathogenesis, clinical features; investigation and implications on health and fertility and management of endometriosis and adenomyosis	K/S	KH	Y	LGT,SGT	Written/Viva voce	
Topic 35: Obstetrics & Gynecological skills-I		**Number of competencies:(20)**			**Number of competencies that require certification:(12)**		
OG35.1	Obtain a logical sequence of history, and perform a humane and thorough clinical examination, excluding internal examinations (per-rectal and per-vaginal)	K/S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	5
OG35.2	Arrive at a logical provisional diagnosis after examination.	K/S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	5
OG35.3	Recognize situations, which call for urgent or early treatment at secondary and tertiary centres and make a prompt referral of such patients after giving first aid or emergency treatment.	K/S	SH	Y	Bedside clinics	Clinical assessment/ Viva voce	
OG35.4	Describe, discuss and demonstrate examination, differential diagnosis and management of a case of suprapubic lump in abdomen	K/S	SH	Y	Bedside clinics	Clinical assessment/ Viva voce	
OG 35.5	Describe, discuss and demonstrate examination, differential diagnosis and management of a case of vaginal discharge	K/S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	
OG35.6	Describe, discuss and demonstrate examination, differential diagnosis and management of a case of genital ulcers	K/S	SH	Y	Bedside clinics	Clinical assessment/ Viva voce	
OG35.7	Demonstrate inter-personal and communication skills befitting a physician in order to discuss illness and its outcome with patient and family	A/C	SH	Y	Bedside clinics	Clinical assessment/ Viva voce/ OSCE	2

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG35.8	Determine gestational age, EDD and obstetric formula	K/S	SH	Y	Bedside clinics	Clinical assessment/ Viva voce, OSCE	5
OG35.9	Demonstrate ethical behavior in all aspects of medical practice.	A/C	SH	Y	Bedside clinics	Clinical assessment / Viva voce	
OG35.10	Obtain informed consent for any examination /procedure	S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	
OG35.11	Write a complete case record with all necessary details	S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	5
OG35.12	Write a proper discharge summary with all relevant information	S	SH	Y	Bedside clinics	Clinical assessment	2
OG35.13	Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	S	SH	Y	Bedside clinics	Clinical assessment / Viva voce	2
OG35.14	Demonstrate the correct use of appropriate universal precautions for self-protection against HIV and hepatitis and counsel patients	S	SH	Y	DOAP	Skill assessment	2
OG35.15	Obtain a PAP smear in a stimulated environment	S	SH	Y	DOAP	Skill assessment	3
OG35.16	Demonstrate the correct technique to perform artificial rupture of membranes In a simulated/ supervised environment	S	SH	Y	DOAP	Skill assessment	2
OG35.17	Demonstrate the correct technique to perform and suture episiotomies in a simulated/ supervised environment	S	SH	Y	DOAP	Skill assessment	2
OG35.18	Demonstrate the correct technique to insert and remove an IUD in a simulated /supervised environment	S	SH	Y	DOAP	Skill assessment	
OG35.19	Diagnose and provide emergency management of antepartum and postpartum hemorrhage in a simulated /guided environment	K/S	SH	Y	DOAP	Skill assessment	
OG35.20	Demonstratethecorrecttechniqueofurinarycatheterisationinasimulated/supervisedenvironment	S	SH	Y	DOAP	Skill assessment	3
Topic 36: Obstetrics &Gynecological skills-II		**Number of competencies:(03)**			**Number of competencies that require certification:(NIL)**		
OG36.1	Plan and institute a line of treatment, which is need based, cost-effective and appropriate for common conditions taking in to consideration (a) Patient (b) Disease (c) Socio-economic status (d) Institution/ Governmental guidelines.	K/S	SH	Y	Bedside clinics,SGT	Clinical assessment/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OG36.2	Organise antenatal, post-natal, and family welfare clinics	K/S	KH	Y	Bedsideclinics	Clinical Assessment/ Viva voce	
OG36.3	Demonstrate the correct technique of punch biopsy of cervix in a simulated /supervised environment	S	SH	Y	Bedsideclinics	Clinical assessment/ Viva voce	
Topic 37: Obstetrics & Gynecological skills-III		**Number of competencies:(07)**			**Number of competencies that require certification:(NIL)**		
OG37.1	Observe and assist in the performance of a Caesarean section	K/S/A/C	SH	Y	Bedside clinics,SGT	Logbook	
OG37.2	Observe and assist in the performance of Laparotomy	K/S/A/C	SH	Y	Bedside clinics,SGT	Clinical assessment / Vivavoce	
OG37.3	Observe and assist in the performance of Hysterectomy– abdominal/ vaginal	K/S/A/C	SH	Y	Bedside clinics,SGT	Clinical assessment/ Viva voce	
OG37.4	Observe and assist in the performance of Dilatation & Curettage (D&C)	K/S/A/C	SH	Y	Bedside clinics,SGT	Clinical assessment/ Viva voce	
OG37.5	Observe and assist in the performance of Endometrial aspiration- endocervical curettage (EA-ECC)	K/S/A/C	SH	Y	Bedside clinics, SGT	Viva voce	
OG37.6	Observe and assist in the performance of outlet forceps application of vacuum and breech delivery	K/S/A/C	SH	Y	Bedside clinics, SGT	Log book	
OG37.7	Observe and assist in the performance of MTP in the first trimester and evacuation in incomplete abortion	K/S/A/C	SH	Y	Bedside clinics, SGT	Clinical assessment / Viva voce	
Topic 38:Should observe		**Number of competencies:(04)**			**Number of competencies that require certification:(NIL)**		
OG38.1	Laparoscopy	K/S/A/C	KH	Y	Bedside clinic, SGT	Clinical assessment/ Viva voce	
OG38.2	Hysteroscopy	K/S/A/C	KH	Y	Bedside clinics, SGT	Clinical assessment/ Viva voce	
OG38.3	Lap sterilization	K/S/A/C	KH	Y	Bedside clinics, SGT	Clinical assessment/ Viva voce	
OG38.4	Assess the need for And issue proper medical certificates to patients for various purposes	K/S/A/C	KH	Y	Bedside clinics, SGT	Clinical assessment/ Viva voce	

ORTHOPEDICS(CODE:OR)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
ORTHOPEDICS(Topics:14, Competencies: 40)							
Topic 1: Skeletal Trauma, Poly trauma	**Number of competencies : (06) Number of competencies that require certification: (NIL)**						
OR1.1	Describe and discuss the Principles of pre-hospital care and Emergency room managementofatraumavictimincludingprinciplesof triage and advance trauma life support.	K/S/A/C	K/KH	Y	LGT with video, SGT	Written/Vivavoce/ OSCE/ Simulation	
OR1.2	Describe and discuss the etiopathogenesis, clinical features, investigations, and principles of management of shock	K/S	K/KH	Y	LGT	Written/Vivavoce/ OSCE/ Simulation	
OR1.3	Describe and discuss the etiopathogeneses, clinical features, investigations, and principles of management of soft tissue injuries	K	KH/SH	Y	LGT,SGT	Written/OSCE	
OR1.4	Describe and discuss the etiopathogenesis, clinical features, investigations, and principles of management of dislocation of common joints, shoulder, knee, hip and fingers.	K	K/KH	Y	LGT,SGT,Bedside clinic	Written/Vivavoce/ OSCE/ Simulation	
OR1.5	Participate as a member in the team for closed reduction of shoulder dislocation / hip dislocation / knee dislocation and dislocation of finger joints,	K/S/A/C	SH	Y	Simulation,DOAP	OSCE/Simulation	
OR1.6	Discuss the recent advances in the management of various orthopaedic conditions like trauma, sports injuries, arthroplasty and spine pathologies.	K	K/KH	N	SGT,bedside clinic	Viva voce/OSCE	
Topic 2: Fractures	**Number of competencies : (16)**			**Number of competencies that require certification: (NIL)**			
OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle	K/S	KH/SH	Y	LGT,SGT,Bedside clinic	Written/Viva voce/ OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OR2.2	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus	K	K/KH/ SH	Y	LGT,SGT,Bedside clinic	Written/Vivavoce/ OSCE	
OR2.3	Select, prescribe and communicate appropriate medications for relief of joint pain	K	KH/SH	Y	LGT,SGT,Bedside clinic	Written/Vivavoce/ OSCE	
OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovascular deficit	K/S	K/KH	Y	LGT,SGT,Bedside clinic	Written/Vivavoce/ OSCE	
OR2.5	Describe and discussthe aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius	K	KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic Pelvi-Acetabular injuries with emphasis on hemodynamic instability	K	K/KH/ SH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasis on mobilisation of the patient	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2. 2.9	Describe an discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur including neck of femur and intertrochanteric fractures.	K/S/A/C	KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OR2.10	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b)Fracture distal femur(c)Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.11	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR 2.12	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot (d) Lisfranc fracture dislocation	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.13	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures	K/S/C	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR 2.14	Plan and interpret the investigations to diagnose complicationsof fractures like malunion, non-union and infection**.**	K/S	SH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR 2.15	Describeand discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection prevention and management.	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
OR2.16	Describe and discuss the mechanism of injury, clinical features, investigationsandprinciplesofmanagementof following orthopaedic injuries in children: a) Fracture supracondylar humerus with emphasis on neurovascular injury and compartment syndrome. b) Forearm and distal end radius fractures, pulled elbow. c) Epiphyseal injuries	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
	d) Fracture shaft femur, tibia/ both bones of the leg e) Non-accidental injuries / child abuse						
Topic 3: Musculoskeletal Infection		**Number of competencies:(03)**		**Number of Procedures that require certification:(NIL)**			
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Septic arthritis & HIV infection d) Chronic osteomyelitis	K/S	K/KH/ SH	Y	LGT,SGT,Video assistedlecture	Written/Vivavoce/ OSCE	
OR3.2	Participate as a member in team for aspiration of joints under supervision	K/S/A/C	SH	Y	Small group Discussion.DOAP	Vivavoce/OSCE/ Skills assessment	
OR3.3	Participateasamemberinteamforcompetencieslikedrainageof abscess, sequestrectomy/ saucerisation and arthrotomy	K/S/A/C	SH	Y	DOAP,Video demonstration	Vivavoce/OSCE/ Skills assessment	
Topic 4: Skeletal Tuberculosis		**Number of competencies : (01**		**Number of competencies that require certification: NIL**			
OR4.1	Describe and discuss the clinical features, Investigation and principlesofmanagementofTuberculosisaffectingmajorjoints (Hip, Knee) including cold abscess and caries spine	K	K/KH	Y	LGT,SGT,Case discussion	Written/Vivavoce/ OSCE	
Topic 5:Rheumatoid Arthritis and associated inflammatory disorders		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR5.1	Describe how to approach to a case of poly arthritis discuss the aetiopathogenesis, clinical features, investigations and principles of management of various inflammatory disorder of joints like rheumatoid arthritis, ankylosing spondylitis and psoriatic arthritis.	K	K/KH	Y	LGT,SGT, Bedside clinic	Written/Vivavoce/ OSCE	
Topic 6: Degenerative disorders		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OR6.1	Enumerate the causes of low back pain, Describe and discuss the clinical features, investigations and principles of management of degenerative condition of spine (Cervical Spondylosis, Lumbar Spondylosis, PID)	K	K/KH	Y	LGT,SGT,Case discussion	Written/Vivavoce/ OSCE	
Topic 7: Metabolic bone disorders		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR7.1	Describe and discuss the aetiopathogenesis, clinical features, investigation and principles of management of metabolic bone disorders in particular osteoporosis, osteomalacia, rickets,Paget's disease.Discuss the deformities in rickets and their management.	K	K/KH	Y	LGT,SGT, Case discussion	Written/Vivavoce/ OSCE	
Topic 8: Poliomyelitis		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR8.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management a patient with Post-Polio Residual Paralysis	K	K/KH	Y	LGT,SGT, Case discussion	Written/Vivavoce/ OSCE	
Topic 9: CerebralPalsy		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR9.1	Describe and discuss the aetiopathogenesis, clinical features, assessment and principles of management of Cerebral palsy patient	K	K/KH	Y	LGT,SGT	Written/Vivavoce/ OSCE	
Topic 10: BoneTumors		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR10.1	Describe and discuss the aetiopathogenesis, clinical features, investigations andprinciples ofmanagement of benign and malignant bonetumorsand pathological fractures	K	K/KH	Y	LGT,SGT, Video assisted interactive lecture	Written/Vivavoce/ OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
Topic 11:Peripheral nerve injuries		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR11.1	Describe the aetiopathogenesis, clinical features, investigations andprinciples ofmanagement of peripheral nerve injuries. Discuss the management of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerve injuries. Demonstrate splints used in footdrop, wristdrop and clawhand.	K	K/H	Y	LGT,SGT, case discussion	Written/Vivavoce/ OSCE	
Topic 12: Congenital lesions		**Number of competencies:(01)**		**Number of competencies that require certification:(NIL)**			
OR12.1	Describe and discuss the clinical features, investigations and principles of management of Congenital and acquired malformations and deformities of: a. Limbs and spine-Scoliosis and spinal bifida b. Congenital dislocation of Hip, Torticollis, c. Congenital talipes equinovarus	K	KH	Y	LGT,SGT	Written/Vivavoce/ OSCE	
Topic 13:Procedural Skills		**Number of competencies:(02)**		**Number of competencies that require certification:(NIL)**			
OR13.1	Participate in a team for competencies in patients and demonstrating the ability to perform on mannequins / simulated patients in the following: i. Above elbow plaster ii. Below knee plaster iii. Above knee plaster iv. Thomas splint v. Splinting for long bone fractures vi. Strapping for shoulder and clavicle trauma	S/A	KH/ SH	Y	Case discussion,Video assisted LGT,SGT, Teaching, Skill lab sessions	OSCE withSimulation based assessment	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
OR13.2	Participate as a member in team for Resuscitation of Polytrauma victim by doing all of the following: (a) I.V. access central-peripheral (b) Bladder catheterization (c) Endotracheal intubation (d) Splintage	S/A	KH/ SH	Y	Case discussion, Video assisted LGT,SGT, Teaching, Skill lab sessions	OSCE with Simulation based assessment	
Topic 14: CounsellingSkills		**Number of competencies:(03)**	**Number of competencies that require certification:(NIL)**				
OR14.1	Demonstrate the ability to counsel patients regarding prognosis in patients with various orthopedic illnesses like a. Fractures with disabilities b. Fractures that require prolonged bed stay c. Bone tumors d. Congenital disabilities	K/S/A/C	KH/ SH	Y	Case discussion, Video assisted lecture, SGT, Teaching, Skills lab sessions	OSCE withSimulation based assessment	
OR14.2	Demonstrate the ability to counsel patients to obtain consent for various orthopedic competencies like limb amputation, permanent fixations etc..	K/S/A/C	KH/ SH	Y	Case discussion, Video assisted LGT,SGT, Teaching, Skills lab sessions	OSCE with Simulation based assessment	
OR14.3	Demonstrate the ability to convince the patient for referral to a higher center in various orthopedic illnesses like acute osteomyelitis. septic arthritis, neurovascular injuries and low back pain with red flags, based on the detection of warning signals and need for appropriate management	K/S/A/C	KH/ SH	Y	Case discussion, Video assistedLGT,SGT, Teaching, Skills lab sessions	OSCE with Simulation based assessment	
OR14.4	Describe various amputations of the lower limb. Discuss the ideal stump and various prosthesis used in rehabilitation of patient with below knee amputation.	K/A	K/KH	Y	LGT, small group discussion/ bed side clinic	OSCE, Clinical case presentation	

ANAESTHESIOLOGY (CODE: AS)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
ANAESTHESIOLOGY (Topics:11, Competencies: 52)							
Topic 1: Anaesthesiology as a specialty	**Number of competencies: (04)**			**Number of competencies that require certification: (NIL)**			
AS1.1	Describe the evolution of Anaesthesiology as a modern specialty	K	K	N	LGT	Written/ Viva voce	
AS1.2	Describe the roles of Anaesthesiologist in the medical profession (including as a peri-operative physician, in the intensive care and high dependency units, in the management of acute and chronic pain, including labour analgesia, in the resuscitation of acutely ill)	K	K	N	LGT	Written/ Viva voce	
AS1.3	Enumerate and describe the principle of ethics as it relates to Anaesthesiology	K	K	N	LGT	Written/ Viva voce	
AS1.4	Describe the prospects of Anaesthesiology as a career	K	K	N	LGT	Written/ Viva voce	
Topic 2: Cardiopulmonary resuscitation	**Number of competencies: (02)**			**Number of competencies that require certification : (02)**			
AS2.1	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Basic Life Support in adults, children and neonates	K/S	SH	N	DOAP	Skill assessment	2
AS2.2	Enumerate the indications, describe the steps and demonstrate in a simulated environment, Advanced Life Support in adults and children	S	SH	N	DOAP	Skill assessment	2
Topic 3: Preoperative evaluation and medication	**Number of competencies: (06)**			**Number of competencies that require certification : (02)**			
AS3.1	Describe the principles of preoperative evaluation	K	KH	Y	LGT, SGT	Written/ Viva voce	
AS3.2	Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains to a preoperative anaesthetic evaluation	S	SH	Y	DOAP, Bedside clinic	Skill station	2
AS3.3	Demonstrate and document an appropriate clinical examination in a patient undergoing General Surgery	S	SH	Y	DOAP, Bedside clinic	Skill station	2

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
AS3.4	Choose and interpret appropriate testing for patients undergoing Surgery	S	SH	Y	DOAP, Bedside clinic	Skill station	
AS3.5	Determine the readiness for General Surgery in a patient based on the preoperative evaluation	S	SH	Y	DOAP, Bedside clinic	Skill station	
AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	S	SH	Y	DOAP, Bedside clinic	Skill station	
Topic 4: General Anaesthesia		**Number of competencies:(07)**			**Number of competencies that require certification : (NIL)**		
AS4.1	Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non depolarising muscle relaxants, anticholinesterases)	K	KH	Y	LGT, SGT	Written/ Viva voce	
AS4.2	Describe the anatomy of the airway and its implications for general Anaesthesia	K	KH	Y	LGT, SGT	Written/ Viva voce	
AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS4.4	Observe and describe the principles and the steps/ techniques in maintenance of vital organ functions in patients undergoing surgical competencies	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS4.5	Observe and describe the principles and the steps/ techniques in monitoring patients during anaesthesia	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS4.6	Observe and describe the principles and the steps/ techniques involved in day care anesthesia	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS4.7	Observe and describe the principles and the steps/ techniques involved in anaesthesia outside the operating room	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 5: Regional anaesthesia		**Numberof competencies:(06)**			**Number of competencies that require certification: (NIL)**		
AS5.1	Enumerate the indications for and describe the principles of regional anaesthesia (including spinal, epidural and combined)	K	KH	Y	LGT, SGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
AS5.2	Describe the correlative anatomy of the brachial plexus, subarachnoid and epidural spaces	K	KH	Y	LGT, SGT	Written/ Viva voce	
AS5.3	Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
ASS.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS5.5	Observe and describe the principles and steps/ techniques involved in caudal epidural in adults and children	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS5.6	Observe and describe the principles and steps/ techniques involved in common blocks used in surgery (including brachial plexus blocks)	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 6: Post-anaesthesia recovery	**Number of competencies: (03)**			**Number of competencies that require certification: (NIL)**			
AS6.1	Describe the principles of monitoring and resuscitation in the recovery room	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS6.2	Observe and enumerate the contents of the crash cart and describe the equipment used in the recovery room	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS6.3	Describe the common complications encountered by patients in the recovery room, their recognition and principles of management	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 7: Intensive Care Management	**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**			
AS7.1	Visit, enumerate and describe the functions of an Intensive Care Unit	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS7.2	Enumerate and describe the criteria for admission and discharge of a patient to an ICU	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS7.3	Observe and describe the management of an unconscious patient	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS7.4	Observe and describe the basic setup process of a ventilator	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS7.5	Observe and describe the principles of monitoring in an ICU	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 8: Pain and its management	**Number of competencies: (05)**			**Number of competencies that require certification: (NIL)**			
AS8.1	Describe the anatomical correlates and physiologic principles of Pain	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS8.2	Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate	S	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
AS8.3	Describe the pharmacology and use of drugs in the management of pain	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS8.4	Describe the principles of pain management in palliative care	K	KH	Y	LGT. SGT, DOAP	Written/ Viva voce	
AS8.5	Describe the principles of pain management in the terminally ill	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 9: Fluids	**Number of competencies: (04)**			**Number of competencies that require certification: (NIL)**			
AS9.1	Establish intravenous access in a simulated environment	S	KH	Y	SGT, DOAP	Skill assessment	
AS9.2	Establish central venous access in a simulated environment	S	KH	Y	SGT, DOAP	Skill assessment	
AS9.3	Describe the principles of fluid therapy in the preoperative period	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 10: Patient safety	**Number of competencies:(04)**			**Number of competencies that require certification: (NIL)**			
AS10.1	Enumerate the hazards of incorrect patient positioning	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS10.2	Enumerate the hazards encountered in the perioperative period and steps/techniques taken to prevent them	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS10.3	Describe the role of communication in patient safety	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
AS10.4	Define and describe common medical and medication errors in anaesthesia	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce	
Topic 11: Oxygen Delivery Devices, Oxygen Therapy and Airway Management	**Number of Competencies: 06**			**Number of competencies that require certification:0 6**			
AS11.1	Describe oxygen delivery devices - nasal cannulas, simple face masks, Venturi masks non-rebreathing masks, BVM, and HFNC. Understand the indications in accordance with clinical scenarios. Demonstrate correct setup and usage of oxygen delivery devices ensuring patient safety and device efficiency.	K	KH	Y	LGT, SGT, DOAP	Written/ Viva voce, OSCE	
AS11.2	Describe the principles of oxygen therapy, importance of FiO2, flow rate adjustment, monitoring and safety precautions during oxygen therapy.	S	SH	Y	LGT, SGT, DOAP	Written/ Viva voce OSCE	
AS11.3	Describe and demonstrate the techniques of opening the airway (head tilt, chin lift, jaw thrust) in a simulated environment.	S	SH	Y	LGT, SGT, DOAP	Written/ Viva voce OSCE	
AS11.4	Observe and demonstrate correct insertion of oropharyngeal and nasopharyngeal airways.	S	SH	Y	LGT, SGT, DOAP	Written/ Viva voce OSCE	
AS11.5	Enumerate the indications of advanced airway management. Describe the steps and demonstrate in a simulated environment -	S	SH	Y	LGT, SGT, DOAP	Written/ Viva voce, OSCE	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
	manual ventilation by BVM, Endotracheal intubation, and LMA insertion.						
AS11.6	Ventilation Techniques Explain the principle and settings of mechanical ventilation.	S	SH	Y	LGT, SGT, DOAP	Written/ Viva voce, OSCE	

RADIODIAGNOSIS (CODE: RD)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number Required to certify P
RADIODIAGNOSIS (Topics:7, Competencies: 21)							
	Topic 1: General principles of imaging equipmentNumber of competencies:(01)				**Number of competencies that require certification: (NIL)**		
RD1.1	Knowledgeable about the general principles of functioning of imaging modalities such as Plain Xray, Fluoroscopy, CT, Ultrasound, Nuclear medicine modalities (bone scan, PET) and MRI, to the extent that they would be able to (a) exhibit mindful behavior regarding the potential hazards associated with each imaging modality (b) make rational choices about the appropriateness of the modality for a particular purpose, such as what will be seen better in which modality (E.g.: air containing structures would be imaged better in x-ray than in ultrasound)	K,A	SH	Y	Hospital rounds demonstrating equipment and signages, Case based interactive lecture or case-based discussion for modality selection	Written, viva voce	
	Topic 2: Rational choice of modality for a patient	**Number of competencies:(02)**			**Number of competencies that require certification: (NIL)**		
RD2.1	Obtain relevant clinical history to select patients for imaging modalities, in order toto determine suitability for radiation exposure/contrast administration/exposure to magnetic fields (including allergies, renal function, pregnancy, implanted devices)	K,C	SH	Y	Case scenario-based discussions in lecture, SGT for history taking	Direct observation, OSCE	
RD2.2	Select the correct imaging modality and procedure for broad pathology type (infections, tumour, trauma, congenital), body part/system (CNS, head and neck, chest, abdomen and extremities) in adults, children and pregnancy women, mindful of unique needs of pediatric patients with respect to radiation and sedation.	K,A	SH	Y	Case scenario-based discussion in lecture, SGT	Written, viva voce	
	Topic 3: Safety and legal requirementsNumber of competencies:(04Number of competencies that require certification: (NIL)						
RD3.1	Awareness of different types of radiation and the stochastic and	K,A	K	Y	Flipped classroom, SDL	Written, viva voce	

	non-stochastic hazards of radiation in human beings (acute and long-term)						
RD3.2	Knowledgeable about best practices (time, distance and shielding) and provisions to keep x-ray exposure ALARA (as low as reasonably achievable) in clinical practice of radiology and general principles to be followed as per AERB regulatory guidelines	K,A	KH	Y	LGT	Written, viva voce	
RD3.3	Knowledgeable about monitoring radiation exposure in health care workers with dosimeter such as thermoluminescent dosimeter and awareness of the units to measure radiation exposure in human Beings	K,A	K	N	Demonstration of TLD badge, SDL	Written, viva voce	
RD3.4	Knowledgeable about the purpose and components of the PC-PNDT act relevant to a primary care physician	K,A	K	Y	LGT	Viva voce	
	Topic 4: Interdisciplinary communication and interaction	**Number of competencies:(03)**			**Number of competencies that require certification: (NIL)**		
RD4.1	Collaborate with imaging specialists for optimum patient care - provide relevant and clear clinical information in requisitions for imaging, convey appropriate clinical urgency to facilitate correct scheduling of patients for imaging, clarify from imaging specialists when in doubt about appropriateness of imaging procedure	K,A,C	SH	Y	SGT	Written, viva voce	
RD4.2	Apply appropriate safety measures when transporting critically ill patients for imaging competencies such as checking adequacy of oxygen cylinder, following correct precautions in MRI room.	K,A	SH	Y	SGT	Viva voce, Written	
RD4.3	For diseases that can be encountered by primary care physician such as osteoarthritis (x-ray), deep vein thrombosis, cholecystitis, apply anatomical-radiological-pathophysiology correlations as a basis of clinical reasoning and inter-disciplinary communication	K,C	KH	N	SGT	Viva voce	
	Topic 5: Image interpretation	**Number of competencies:(04)**			**Number of competencies that require certification: (NIL)**		
RD5.1	Interpretation of normal X-ray images of the Chest, Abdomen, Musculoskeletal system by identifying normal structures in Chest X-ray, Abdominal X-ray, Musculoskeletal X-ray (upper limbs, lower limbs, spine), PNS – Water's view in adults; normal neonatal Chest x-ray (thymic shadow identification); normal joint x-ray in children (epiphysis and growth plate identification)	K	P	Y	Image based LGT	Written, OSCE	
RD5.2	Age estimation from X-rays by selecting and using appropriate reference standards	K	SH	Y	SDL	Written, OSCE	
RD5.3	Image interpretation of emergency conditions in Chest Xray, Abdominal Xray and skeletal X-rays such as pneumoperitoneum,	K	P	Y	SGT, Clinics	Written, viva voce, OSCE	

	acute fracture, differentiating acute from chronic fracture etc.						
RD5.4	Image interpretation of normal/abnormal position of devices in the Chest X-ray of adult and pediatric ICU patients	K	P	Y	SGT, Clinics	Written, OSCE/OSPE	
Topic 6: Patient preparation for imaging competencies		**Number of competencies (01)**			**Number of competencies that require certification: (NIL)**		
RD6.1	Ability to provide written and verbal instructions tailored to the patient and imaging procedure such as fasting requirement, medication adjustments, bowel preparation	K,C,A	SH	Y	LGT, SGT	Viva voce, case-based questions	
Topic 7: Role of imaging in hospital specialties		**Number of competencies:(06)**			**Number of competencies that require certification: (NIL)**		
RD7.1	Integrate provided imaging findings and description of appearances in the management of PCOD, ectopic pregnancy, evaluation of infertility in the Obstetrics and Gynecology Department	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	
RD7.2	Integrate provided imaging findings and description of appearances in the management of ASOM/CSOM, evaluation of sensorineural hearing loss in the ENT Department	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	
RD7.3	Integrate provided imaging findings and description of appearances in the management of stroke (CT brain), pulmonary embolism, findings associated with cardiac failure and liver parenchymal diseases in the Internal Medicine Department	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	
RD7.4	Integrate provided imaging findings and description of appearances in the management of head injuries, hernia with strangulation, appendicitis and intestinal obstruction in the Surgery Department	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	
RD7.5	Integrate provided imaging findings and description of appearances in the management chest infections, foreign body aspiration, Urinary Tract Infection in the Paediatrics Department	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	
RD7.6	Integrate provided imaging findings and description of appearances in the screening for breast cancer and management of breast cancer patients.	K	KH	Y	SGT with images, Clinics	Written, OSCE/OSPE	

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