DPU
DR. D.Y. PATIL
MEDICAL COLLEGE
HOSPITAL & RESEARCH CENTRE
(A Unit of Dr. D.Y. Patil Vidyapeeth, Pune)
PIMPRI, PUNE

Dr. D. Y. PATIL VIDYAPEETH, PUNE

(Deemed to be University)

Regulations and Competency Based Under Graduate Curriculum for the Indian Medical Graduate in Para-Clinical Subjects (Phase II)

From the Academic Year 2023-24 onwards

(Applicable for the Batch Admitted to the Second Professional M.B.B.S. in 2023-24)

DPU
Dr. D. Y. PATIL VIDYAPEETH, PIMPRI, PUNE
(Deemed to be University)
(Accredited (3rd Cycle) by NAAC with a CGPA of 3.64 on four point scale at 'A++' Grade)
(Declared as Category - I University by UGC Under Graded Autonomy Regulations, 2018)
(An ISO 9001:2015 and 14001:2015 Certified University and Green Education Campus)

Dr. Narendra M. Kadu
Registrar

Ref. No. : DPU/601-AC(i)/24
Date : 16/07/2024

NOTIFICATION

In Pursuance of the Competency-Based Undergraduate Curriculum for the Indian Medical Graduate published by National Medical Commission (Undergraduate Medical Education Board, 2023) vide its Notification No. U. 14021/8/2023-UGMEB dated 1st August 2023.

And Whereas in pursuance of the resolution passed by the **Academic Council** at its meeting held on **14th June, 2024** vide **Resolution No. BM-23(i)-24** regarding implementing a competency-based curriculum for **Second Professional MBBS students as per NMC regulations**.

And Whereas in pursuance of the resolution passed by the **Executive Council** at its meeting held on **26th June, 2024** vide **Resolution No. BM-19(i)-24** regarding implementing a competency-based curriculum for **Second Professional MBBS students as per NMC regulations**.

It is notified to all concerned that the **Regulations and Competency-Based Curriculum for the Indian Medical Graduate in Para-Clinical Subjects (Phase II)** from the **Academic Year 2023-24** and onwards is hereby published.

The **Revised Competency-Based Curriculum for the Indian Medical Graduate in Para-Clinical Subjects (Phase II)** consists of a syllabus for the following courses:

1. **Pharmacology**
2. **Pathology**
3. **Microbiology**

The syllabus will be useful to all concerned. This will come into force with immediate effect.

Dr. D. Y. PATIL VIDYAPEETH PIMPRI, PUNE-18. Deemed to be University

(Dr. Narendra M. Kadu)
Registrar

Copy to:
1. PS to Chancellor for kind information of Hon'ble Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
2. PS to Vice Chancellor for kind information of Hon'ble Vice Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
3. The Dean, Dr. D. Y. Patil Medical College Hospital & Research Centre, Pimpri, Pune
4. The Controller of Examinations, Dr. D. Y. Patil Vidyapeeth, Pune.
5. Director (IQAC), Dr. D. Y. Patil Vidyapeeth, Pune.
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CBME Curriculum

1. Preamble

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

About 25 years have passed since the existing Regulations on Graduate Medical Education, 1997 were notified, necessitating a relook at all aspects of the various components in the existing regulations 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 strong and forward-looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2019 will reveal that the 2019 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education 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 (sub) competencies. These "sub-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 curriculum time in the form of a longitudinal program 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, social and economic 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.

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 fulfils 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 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 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:

a) 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.

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 drugs" and their common side 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 and dependability and ability to relate to or show concern for other individuals.

5. 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, analyze, synthesize and communicate health data appropriately.

c) Communicator with patients, families, colleagues and community.

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.

f) Critical thinker who demonstrates problem solving skills in professional practice.

g) Researcher who generates and interprets evidence.

6. Competency Base Training Programme of the Indian Medical Graduate

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

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, behavioural and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural 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, healthcare 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 conform 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.

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.

Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- Demonstrate ability to communicate with patients 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.

7. 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.

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

- 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 a commitment to the growth of the medical profession as awhile.

Regulations:

1. Second Professional MBBS training is for 12 months.
2. It consists of Pathology, Pharmacology, Microbiology, family visit under Community Medicine, General Surgery, General Medicine & Obstetrics & Gynaecology Professional development AETCOM module, simulation-based learning and introduction to clinical subjects ensuring both alignment & all types of integration.
3. Attendance: There shall be a minimum of 75% attendance in theory and 80% 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% in practical in each phase of instruction in that subject.
4. Appointment of Examiners:
    a. Person appointed as an examiner in the particular subject must have at least four years of total teaching experience as Assistant Professor after obtaining postgraduate degree following MBBS, in the subject in a college affiliated to a recognized medical college (by UGMEB of NMC).
    b. 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 the coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained.
    c. There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
    d. All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.
    e. All theory paper assessment should be done as central assessment program (CAP) of concerned university.
    f. Internal examiners shall be appointed from the same institution for unitary examination in the same institution.

5. Criteria for Passing:

    a. In subjects that have two papers, the learner must secure minimum 40% of marks in aggregate (both papers together) to pass in the said subject.

    b. A candidate shall obtain 50% marks in aggregate and 60:40 (minimum) or 40:60 (minimum) in University conducted examination separately in Theory and in Practical (practical includes: practical/clinical and viva voce) in order to be declared as passed in that subject.

6. **No grace marks to be considered for passing the examination.**

PHARMACOLOGY

PHARMACOLOGY

a. Competencies

The undergraduate must demonstrate:

- Knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics,
- Ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance,
- Knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship,
- Ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems.

b. Broad subject specific objectives

(A) Knowledge:

At the end of the course, the student shall be able to

- Describe the Pharmacokinetics and Pharmacodynamics of essential and commonly used drugs.
- Enlist the indications, contraindications, interactions and adverse reactions of commonly used drugs.
- Tailor the use of appropriate drugs in disease with consideration of its cost, efficacy and safety for-

    a. Individual needs and

    b. Mass therapy, under National Health Programs.

- Integrate the list of drugs of addiction and recommend the management of drug addiction.
- Explain pharmacological basis of prescribing drugs in special medical situations such as pregnancy, lactation, infancy, old age, renal damage, hepatic damage and immuno-compromised patients.
- Explain the concept of rational drug therapy in clinical pharmacology.
- State the principles underlying the concept of 'Essential Drugs'.
- Evaluate the ethics and modalities involved in the development and introduction of new drugs.

c. Skills

At the end of the course, the student shall be able to

- Prescribe drugs for common ailments.
- Identify adverse reactions and drug interactions of commonly used drugs.
- Interpret the data obtained from the experiments designed for the study of effect of drugs in various experimental and clinical studies.
- Analyze the information regarding common pharmaceutical preparations and critically evaluate drug formulations.
- Appraise the Principles of Clinical Pharmacy and Dispense the Medications giving proper instructions.

d. Integration:

Practical knowledge of use of drugs in Clinical Practice will be acquired through Integrated Teaching vertically with phase 1 subjects and horizontally with other phase 2 subjects.

PHARMACOLOGY (CODE : PH)

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PHARMACOLOGY									
KNOWLEDGE: Topic: Pharmacology, Number of competencies: (64), Number of procedures that require certification : (NIL)									
PH1.1	Define and describe the principles of pharmacology and pharmacotherapeutics	K	K	Y	Lecture	Written/ Viva voce			
PH1.2	Describe the basis of Evidence based medicine and Therapeutic drug monitoring	K	KH	Y	Lecture	Written/ Viva voce			
PH1.3	Enumerate and identify drug formulations and drug delivery systems	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.4	Describe absorption, distribution, metabolism and excretion of drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.5	Describe general principles of mechanism of drug action	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.6	Describe principles of Pharmacovigilance and ADR reporting systems	K	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.7	Define, identify and describe the management of adverse drug reactions (ADR)	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.8	Identify and describe the management of drug interactions	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.9	Describe nomenclature of drugs i.e. generic, branded drugs	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.10	Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately	K/S	SH	Y	Lecture, Practical	Written/ Viva 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 method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.11	Describe various routes of drug administration, e.g. oral, SC, IV, IM, SL	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.	K/S	SH	Y	Lecture, practical	Written/ Viva voce		Pediatrics, General Medicine	
PH1.13	Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti-adrenergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva 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 method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.14	Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology, Physiology	
PH1.16	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminics, 5 - HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.17	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.18	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and preanesthetic medications	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	
PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives and hypnotics, anti-psychotic, antidepressant drugs, anti -maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)	K	KH	Y	Lecture	Written/ Viva voce		Psychiatry, Physiology	
PH1.20	Describe the effects of acute and chronic ethanol intake	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
PH1.21	Describe the symptoms and management of methanol and ethanol poisonings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.22	Describe drugs of abuse (Dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	Forensic Medicine
PH1.23	Describe the process and mechanism of drug deaddiction	K/S	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
PH1.24	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretics-vasopressin and analogues	K	KH	Y	Lecture	Written/ Viva voce			
PH1.25	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.26	Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin angiotensin and aldosterone system	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.28	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (Stable, unstable angina and myocardial infarction), peripheral vascular disease	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.29	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.30	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics	K	KH	N	Lecture	Written/ Viva voce		General Medicine	
PH1.31	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PH1.32	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respirator y Medicine	
PH1.33	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (Antitussives, expectorants/ mucolytics)	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respirator y Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.34	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below: 1. Acid-peptic disease and GERD 2. Antiemetics and prokinetics 3. Antidiarrheals 4. Laxatives 5. Inflammatory Bowel Disease 6. Irritable Bowel Disorders, biliary and pancreatic diseases	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		General Medicine	
PH1.35	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: 1. Drugs used in anemias 2. Colony Stimulating factors	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Physiology	Pharmacology
PH1.36	Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (Diabetes mellitus, thyroid disorders and osteoporosis)	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.37	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones	K	KH	Y	Lecture	Written/ Viva voce			
PH1.38	Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids	K	KH	Y	Lecture	Written/ Viva voce			
PH1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics and Gynaecology	
PH1.40	Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility and 2. Drugs used in erectile dysfunction	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics and Gynaecology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.41	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics and Gynaecology	
PH1.42	Describe general principles of chemotherapy	K	KH	Y	Lecture	Written/ Viva voce			
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology
PH1.44	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	
PH1.45	Describe the drugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology and Leprosy	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, Kala-Azar, amebiasis and intestinal helminthiasis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology
PH1.48	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV	K	KH	Y	Lecture	Written / Viva voce			Microbiology
PH1.49	Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drugs	K	KH	Y	Lecture	Written / Viva voce			
PH1.50	Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection	K	KH	Y	Lecture	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.51	Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents	K	KH/	Y	Lecture	Written/ Viva voce			
PH1.52	Describe management of common poisoning, insecticides, common sting and bites	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.53	Describe heavy metal poisoning and chelating agents	K	KH	N	Lecture	Written/ Viva voce			
PH1.54	Describe vaccines and their uses	K	KH	Y	Lecture	Written/ Viva voce			
PH1.55	Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filaria, Kala Azar, Diarrhoeal diseases, Anaemia and nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
PH1.56	Describe basic aspects of Geriatric and Pediatric pharmacology	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.57	Describe drugs used in skin disorders	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology and Leprosy	
PH1.58	Describe drugs used in Ocular disorders	K	KH	Y	Lecture	Written/ Viva voce		Ophthalmology	
PH1.59	Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines	K	KH	Y	Lecture	Written/ Viva voce			
PH1.60	Describe and discuss Pharmacogenomics and Pharmacoeconomics	K	KH	N	Lecture	Written/ Viva voce			
PH1.61	Describe and discuss dietary supplements and nutraceuticals	K	KH	N	Lecture	Written/ Viva voce			
PH1.62	Describe and discuss antiseptics and disinfectants	K	KH	Y	Lecture	Written/ Viva voce			
PH1.63	Describe Drug Regulations, acts and other legal aspects	K	KH	Y	Lecture	Written/ Viva 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 method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.64	Describe overview of drug development, Phases of clinical trials and Good Clinical Practice	K	KH	Y	Lecture	Written/ Viva voce			
SKILLS: Topic: Clinical Pharmacy, Number of competencies : (04), Number of procedures that require certification : (NIL)									
PH2.1	Demonstrate understanding of the use of various dosage forms (oral/ local/parenteral; solid/liquid)	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.2	Prepare oral rehydration solution from ORS packet and explain its use	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment	S	SH	Y	DOAP sessions	Skills assessment			
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	S	SH	Y	DOAP sessions	Skills assessment		Pediatrics, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
SKILLS: Topic: Clinical Pharmacology, Number of competencies: (08), Number of procedures that require certification : (04)									
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	S/C	P	Y	Skill station	Skill station	5	General Medicine	
PH3.2	Perform and interpret a critical appraisal (audit) of a given prescription	S	P	Y	Skill Lab	Maintenance of logbook	3		
PH3.3	Perform a critical evaluation of the drug promotional literature	S	P	Y	Skill Lab	Maintenance of logbook/ Skill station	3	General Medicine	
PH3.4	To recognise and report an adverse drug reaction	S	SH	Y	Skill station	Maintenance of logbook/ Skill station			
PH3.5	To prepare and explain a list of P-drugs for a given case/condition	S	P	Y	Skill station	Maintenance of logbook	3	General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH3.6	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs	S	SH	N	Skill station	maintenance of logbook			
PH3.7	Prepare a list of essential medicines for a healthcare facility	S	SH	Y	Skill station	Maintenance of logbook			
PH3.8	Communicate effectively with a patient on the proper use of prescribed medication	C/A	SH	Y	Skill Lab	Skill station			
SKILLS: Topic: Experimental Pharmacology, Number of competencies : (02), Number of procedures that require certification:(NIL)									
PH4.1	Administer drugs through various routes in a simulated environment using mannequins	S	SH	Y	DOAP sessions	Skills assessment			
PH4.2	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using computer aided learning	S	SH	Y	Skill lab	Skill station			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Communication Topic : Pharmacology, Number of competencies : (07), Number of procedures that require certification : (NIL)									
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	A/C	SH	Y	Small group discussion	skill station		General Medicine	
PH5.2	Communicate with the patient regarding optimal use of a) drug therapy b) devices and c) storage of medicines	A/C	SH	Y	Small group discussion	Skill station			
PH5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider	A/C	SH	Y	Small group discussion	short note/ skill station			
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance	A/C	SH	Y	Small group discussion	short note/ viva voce		General Medicine	
PH5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	K	KH	Y	Small group discussion	short note/ Viva voce		Psychiatry	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH5.6	Demonstrate ability to educate public and patients about various aspects of drug use including drug dependence and OTC drugs	A/C	SH	Y	Small group discussion	Skill station		Psychiatry	
PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	K	KH	Y	Small group discussion	short note/ Viva voce			Forensic Medicine
Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently, Column F: DOAP session – Demonstrate, Observe, Assess, Perform. Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation									
INTEGRATION									
PHYSIOLOGY									
PY3.5	Discuss the action of neuro-muscular blocking agents	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Anaesthesiology, Pharmacology	
MICROBIOLOGY									
MI1.6	Describe the mechanisms of drug resistance, methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy.	K	K	Y	Lecture , Small group discussion	Written Viva			Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid Peptic Disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
COMMUNITY MEDICINE									
CM3.8	Describe the mode of action and application cycle of commonly used insecticides and rodenticides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
CM19.1	Define and describe the concept of Essential Medicine List (EML)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CM19.2	Describe roles of essential medicine in primary health care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
CM19.3	Describe counterfeit medicine and its prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
FORENSIC MEDICINE AND TOXICOLOGY									
FM4.11	Describe and discuss euthanasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.17	Describe and discuss ethical Principles: Respect for autonomy, non-malfeasance, beneficence and justice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM4.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.25	Clinical research and Ethics: Discuss human experimentation including clinical trials	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.26	Discuss the constitution and functions of ethical committees	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects and Animals	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM8.1	Describe the history of Toxicology	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM8.3	Describe the various types of poisons, Toxicokinetics and Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	
FM8.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	
FM8.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSPE		Pharmaco logy	
FM8.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce /OSCE		Pharmaco logy	
FM8.7	Describe simple Bedside clinic tests to detect poison / drug in a patient's body fluids	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce /OSCE		Pharmaco logy, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM8.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Caustics Inorganic – sulphuric, nitric, and hydrochloric acid Organic- Carboloic Acid (phenol), Oxalic and acetylsalicylic acids.	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.2	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM9.3	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.4	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM9.5	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	Lectures, Small group discussion Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmaco logy, General Medicine	Pharmaco logy
FM9.6	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide and derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmaco logy, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM10.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures 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 iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi. Gastro-Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DERMATOLOGY, VENEREOLOGY AND LEPROSY									
DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pediatrics	Pharmacology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology
DR8.7	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on National Guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.6	Describe the treatment of Leprosy based on WHO guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.7	Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Psychiatry
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the nonsyphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR15.3	Enumerate the indications and describe the pharmacology indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery	Microbiology, Pharmacology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
ANESTHESIOLOGY									
AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	S	SH	Y	DOAP session, Bedside clinic session	Skill station		Pharmacology	
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	Lecture, Small group discussion	Written / Viva voce		Pharmacology	
AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pharmacology	
AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
AS8.3	Describe the pharmacology and use of drugs in the management of pain	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	
AS8.4	Describe the principles of pain management in palliative care	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS8.5	Describe the principles of pain management in the terminally ill	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS10.4	Define and describe common medical and medication errors in anaesthesia	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PSYCHIATRY									
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS11.4	Describe the treatment of personality disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS12.4	Describe the treatment of psychosomatic disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs in psychiatric disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
GENERAL MEDICINE									
IM1.24	Describe and discuss the pharmacology of drugs including indications and contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient	S	SH	Y	Bedside clinic, Skill assessment	log book documentation of completion		Pharmacology	
IM2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology, Biochemistry	
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM2.23	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	Lecture Small group discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance	K	KH	Y	Small group, Lecture	Written/ Viva voce		Pharmacology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and National Programs	S	SH	Y	Skill assessment	Skill assessment		Microbiology, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessmen t		Microbiolo gy, Pharmaco logy	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmaco logy	
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy	K	KH	Y	Written, Small group	Skill Assessmen t/ Written/ Viva voce		Pharmaco logy	General Surgery
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy, Microbiolo gy	
IM6.17	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiolo gy, Pharmaco logy	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM6.18	Discuss and describe the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM7.21	Select, prescribe and communicate appropriate medications for relief of joint pain	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	Orthopedics
IM7.22	Select, prescribe and communicate preventive therapy for crystalline arthropathies	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.23	Select, prescribe and communicate treatment option for systemic rheumatologic conditions	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.24	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases	K	KH	Y	Bed side clinic, Small group discussion	Skill assessment/ written		Pharmacology	
IM8.14	Develop an appropriate treatment plan for essential hypertension	K	KH	Y	Small group discussion	Skill assessment/ Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM8.15	Recognise, prioritise and manage hypertensive emergencies	S	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM9.14	Prescribe replacement therapy with iron, B12, folate	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pharmacology	
IM9.15	Describe the national programs for anemia prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Community Medicine	
IM10.25	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis	K/C	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM11.18	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	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin	S/C	SH	Y	DOAP session	Skill assessment		Pharmacology	
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	K	KH	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery
IM12.14	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 assessment	Skill assessment		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and General Surgery in the management of thyrotoxicosis	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pharmacology	
IM13.13	Describe and assess pain and suffering objectively in a patient with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.14	Describe the indications for General Surgery, radiation and chemotherapy for common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	Anesthesiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed	K	K	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	General Surgery
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
IM16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pharmacology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.14	Counsel patients with migraine on lifestyle changes and need for prophylactic therapy	A/C	SH	N	DOAP session	Skill Assessment		Pharmacology	
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	General Surgery
IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishing marks of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmaco logy	
IM20.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti-snake venom	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	
IM20.8	Describe the diagnosis, initial approach, stabilisation and therapy of scorpion envenomation	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	
IM20.9	Describe the diagnosis, initial approach, stabilisation and therapy of bee sting allergy	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	
IM21.1	Describe the initial approach to the stabilisation of the patient who presents with poisoning	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmaco logy	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning	S	KH	Y	DOAP session	document in logbook		Forensic Medicine, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM21.6	Describe the medico-legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico-legal report on a suspected poisoning	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Forensic Medicine, Pharmacology	
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico-legal aspects with empathy	A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine, Pharmacology	
IM22.3	Describe the approach to the management of hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PEDIATRICS									
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE13.6	Discuss the National Anaemia Control Program and its recommendations	K	K	Y	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology, Community Medicine	
PE14.1	Discuss the risk factors, clinical features, diagnosis and management of Lead Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	
PE14.3	Discuss the risk factors, clinical features, diagnosis and management of Organo phosphorous poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	General Medicine
PE14.4	Discuss the risk factors, clinical features, diagnosis and management of paracetamol Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
GENERAL SURGERY									
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
PHYSICAL MEDICINE AND REHABILITATION									
PM3.5	Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections	K	KH	Y	Lectures, Small group discussion			Pharmacology	Pediatrics, Orthopedics
PM7.6	Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder	K	KH	Y	Lectures, Small group discussion	Written / Viva voce		Pharmacology	General Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
RESPIRATORY MEDICINE									
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine Microbiology, Pharmacology	
CT1.14	Describe and discuss the pharmacology of various antituberculous agents, their indications, contraindications, interactions and adverse reactions	K	KH	Y	Lecture, Small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and comorbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)	K	SH	Y	Bedside clinic, Small group discussion, Lecture	Skill assessment		Pharmacology, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
ORTHOPAEDICS									
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) Acute Suppurative arthritis d) Septic arthritis and HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/SH	Y	Lecture, Small group Discussion,Video assisted lecture	Written/ Viva voce/ OSCE	_	Pathology, Microbiology	General surgery

Modifications are made as per the National Medical Commission (Under Graduate Medical Education Board, 2023) Notification No. U. 14021/8/2023-UGMEB dated 1st August 2023

University Theory Examination (Paper I & II of 100 marks each):

Type of question	Marks per question	Total marks
Section A		
20 MCQs of one mark each	1X 20 marks	20 marks
Section B		
1 LAQ- Problem Based (Compulsory)	1 x 10 marks	10 marks
1 LAQ (Structured) (Any 1 out of 2)	1 x 10 marks	10 marks
4 SAQs (Any 4 out of 5)	4 X 5 marks	20 marks
Section C		
1 LAQ- Problem Based (Compulsory)	1 x 10 marks	10 marks
1 LAQ (Structured) (Any 1 out of 2)	1 x 10 marks	10 marks
4 SAQs (Any 4 out of 5)	4 X 5 marks	20 marks
	Total	100 marks
Note: AETCOM module will be included in Section B in SAQs of Paper I as well as Paper II		

Management of Pandemics for MBBS Course

Period	Module	Broad Areas	No. of Hours	Major department(s) to coordinate
Phase II	2.1	Infection Control: Part II Air borne precautions Contact Precautions Infection Control Committee	4	Microbiology
	2.2	Emerging and Re-emerging infections, early identification and control of new infections	6	Community Medicine
	2.3	Sample collection, Microbial diagnosis, Serological tests and their performance parameters	6	Microbiology
	2.4	Vaccination strategies including vaccine development & implementation	6	Community Medicine, Biochemistry
	2.5	**Therapeutic strategies including new drug development**	**6**	**Pharmacology, General Medicine**

AETCOM Competencies for Second MBBS in Pharmacology

Subject	Competency Number	Competency
Pharmacology	Module 2.1	Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, non- judgemental and empathetic manner.
	Module 2.8	Demonstrate empathy in patient encounters.

Teaching Hours:

Duration of lectures - **80 hours**
Small group learning - **165 hours**
Self-directed learning - **10 hours**
Total learning hours - **255 hours**

UNIVERSITY THEORY EXAMINATION PATTERN

Paper I and II **Section A and B** **Marks – 100** **Time : 3 Hrs.**

Type of Question	Marks per question	No. of questions	Total marls
One sentence answer	1	5 out of 6	5
LAQ – PB (Compulsory)	10	1	10
LAQ (structured)	10	1 out of 2	10
Short notes	5	5 out of 6	25
	Total	**12**	**50**

Section A = 50 Marks, Section B = 50 Marks, **Total Marks =** 100 for each paper

UNIVERSITY PRACTICAL EXAMINATION PATTERN

Subjects	Practical	Viva	Total
Pharmacology	70	30	100

DISTRIBUTION OF PAPER I AND II

THEORY PAPER - I

General Pharmacology	PH1.1 – PH1.12
Autonomic Nervous System	PH1.13 – PH1.15
Cardiovascular System (including diuretics and blood)	PH1.24 – PH1.31, PH1.35
Gastrointestinal System	PH1.34
Miscellaneous	PH1.50 – PH1.64, PH2.1 – 2.4, PH3.1 – 3.8, PH4.1 -4.2, PH5.1 – PH5.7

THEORY PAPER – II

Central Nervous System	PH1.16 – PH1.23
Antimicrobial drugs	PH1.42 – PH1.49
Respiratory System	PH1.32 – 1.33
Endocrinology	PH1.36 – PH1.41

PATHOLOGY

PATHOLOGY

a. Competencies:

The undergraduate must demonstrate:

- Comprehension of the causes, evolution and mechanisms of diseases,
- Knowledge of alterations in gross and cellular morphology of organs in disease states,
- Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy,

b. Broad subject specific objectives

Knowledge:

At the end of one and half years, the student shall be able to:-

- Describe the structure and ultra structure of a sick cell, causes and mechanisms of cell Injury, cell death and repair.
- Correlate structural and functional alterations in the sick cell.
- Explain the path physiological processes, which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestation associated with it.
- Describe the mechanisms and patterns of tissue response to injury so as to appreciate the path physiology of disease processes and their application to clinical science.
- Correlate the gross and microscopic alterations of different organ systems in common disease to the extent needed for understanding disease processes and their clinical significance.

- Develop an understanding of steps in neoplastic changes in the body and their effects in order to appreciate need for early diagnosis and further management of neoplasia.
- Understand mechanisms of common haematological disorders and develop a logical approach in their diagnosis and management.
- Develop understanding of the blood banking, blood donors & transfusion of blood & blood products, (components).
- Understand pathophysiology of infectious diseases in relation with tissue changes.
- Describe the various immunological reactions in understanding the disease process & tissue transplant.
- Develop an understanding for genetic disorders.
- Understand the vital organ function test of Kidney, liver & thyroid.

c. Skills

At the end of one and half years, the student shall be able to:

- Describe the rationale and principles of routine technical procedures of the diagnostic laboratory tests & perform it.
- Interpret routine diagnostic laboratory tests and correlate with clinical, haematological and morphological changes.
- Perform the simple bed-side tests on blood, urine and other biological fluid samples:
- Draw a rational scheme of investigations aimed at diagnosing and managing the cases of common disorders.
- Able to understand the microscopic and macroscopic features of common diseases.
- Develop different type of skills such as observation skills, communication skill and presentation skill.
- Understand biochemical/physiological disturbances that occur as a result of disease in collaboration with all concerned departments.

d. Integration: The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing deviations from normal structure and function and clinically correlated so as to provide an overall understanding of the aetiology, mechanisms, laboratory diagnosis, and management of diseases.

PATHOLOGY (CODE : PA)

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Introduction to Pathology, Number of competencies : (03), Number of procedures that require certification : (NIL)									
PATHOLOGY									
PA1.1	Describe the role of a pathologist in diagnosis and management of disease	K	K	Y	Departmental orientation	Written/ Viva voce			
PA1.2	Enumerate common definitions and terms used in Pathology	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			
PA1.3	Describe the history and evolution of Pathology	K	K	N	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Cell Injury and Adaptation, Number of competencies: (08), Number of procedures that require certification: (NIL)									
PA2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.5	Describe and discuss pathologic calcifications, gangrene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA2.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
Topic: Amyloidosis, Number of competencies: (02), Number of procedures that require certification: (NIL)									
PA3.1	Describe the pathogenesis and pathology of amyloidosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA3.2	Identify and describe amyloidosis in a pathology specimen	S	SH	N	DOAP session	Skill assessment			
Topic: Inflammation, Number of competencies:(04), Number of procedures that require certification: (NIL)									
PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA4.2	Enumerate and describe the mediators of acute inflammation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA4.3	Define and describe chronic inflammation including causes,	K	KH	Y	Lecture, Small group	Written/ Viva voce			
	types, non-specific and granulomatous; and enumerate examples of each				discussion				
PA4.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
Topic: Healing and repair, Number of competencies: (01), Number of procedures that require certification: (NIL)									
PA5.1	Define and describe the process of repair and regeneration including wound healing and its types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Hemodynamic disorders, Number of competencies: (07), Number of procedures that require certification : (NIL)									
PA6.1	Define and describe edema, its types, pathogenesis and clinical correlations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA6.2	Define and describe hyperemia, congestion, hemorrhage	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.3	Define and describe shock, its pathogenesis and its stages	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA6.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.5	Define and describe embolism and its causes and common types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA6.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.7	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	S	SH	Y	DOAP session	Skill Assessment			
Topic: Neoplastic disorders, Number of competencies: (05) Number of procedures that require certification: (NIL)									
PA7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, biologic, behaviour and spread. Differentiate between benign from maignant neoplams	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.2	Describe the molecular basis of cancer	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA7.3	Enumerate carcinogens and describe the process of carcinogenesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.4	Describe the effects of tumor on the host including paraneoplastic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.5	Describe immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
Topic: Basic diagnostic cytology, Number of competencies : (03), Number of procedures that require certification: (NIL)									
PA8.1	Describe the diagnostic role of cytology and its application in clinical care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA8.2	Describe the basis of exfoliative cytology including the technique and stains used	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA8.3	Observe a diagnostic cytology and its staining and interpret the specimen	S	KH	Y	DOAP session	Skill assessment			
Topic: Immunopathology and AIDS, Number of competencies: (07), Number of procedures that require certification: (NIL)									
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.4	Define autoimmunity. Enumerate autoimmune disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA9.7	Define and describe the pathogenesis of other common autoimmune diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Infections and Infestations, Number of competencies: (04), Number of procedures that require certification: (NIL)									
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
Topic: Genetic and paediatric diseases, Number of competencies: (03), Number of procedures that require certification :(NIL)									
PA11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA11.2	Describe the pathogenesis and pathology of tumor and tumourlike conditions in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
Topic: Environmental and nutritional diseases, Number of competencies:(03), Number of procedures that require certification: (NIL)									
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Pediatrics	
PA12.3	Describe the pathogenesis of obesity and its consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Introduction to haematology, Number of competencies: (05), Number of procedures that require certification: (NIL)									
PA13.1	Describe hematopoiesis and extramedullary hematopoiesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.2	Describe the role of anticoagulants in hematology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.3	Define and classify anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.4	Enumerate and describe the investigation of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.5	Perform, Identify and describe the peripheral blood picture in anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Microcytic anemia, Number of competencies: (03), Number of procedures that require certification: (NIL)									
PA14.1	Describe iron metabolism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PA14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA14.3	Identify and describe the peripheral smear in microcytic anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	
Topic: Macrocytic anemia, Number of competencies: (04), Number of procedures that require certification : (NIL)									
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA15.2	Describe laboratory investigations of macrocytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA15.3	Identify and describe the peripheral blood picture of macrocytic anemia	S	SH	Y	DOAP session	Skill assessment			
PA15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Hemolytic anemia, Number of competencies: (07), Number of procedures that require certification: (01)									
PA16.1	Define and classify hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.3	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		Biochemistry, General Medicine	
PA16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry,, General Medicine	
PA16.5	Describe the peripheral blood picture in different hemolytic anaemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it	S	P	Y	DOAP session	Skill assessment	1		
PA16.7	Discribe the correct technique to perform a cross match	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic: Aplastic anemia, Number of competencies: (02), Number of procedures that require certification: (NIL)									
PA 17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Leukocyte disorders, Number of competencies: (02), Number of procedures that require certification: (NIL)									
PA18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic: Lymph node and spleen, Number of competencies: (07), Number of procedures that require certification:(NIL)									
PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA19.3	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment			
PA19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment		General Surgery	
PA19.6	Enumerate and differentiate the causes of splenomegaly	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery , General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA19.7	Identify and describe the gross specimen of an enlarged spleen	S	SH	Y	DOAP session	Skill assessment			
Topic: Plasma cell disorders, Number of competencies: (01), Number of procedures that require certification: (NIL)									
PA20.1	Describe the features of plasma cell myeloma	S	SH	Y	DOAP session	Skill assessment			
Topic: Hemorrhagic disorders, Number of competencies: (05), Number of procedures that require certification:(NIL)									
PA21.1	Describe normal hemostasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Blood banking and transfusion, Number of competencies: (07), Number of procedures that require certification: (NIL)									
PA22.1	Classify and describe blood group systems (ABO and RH)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA22.4	Enumerate blood components and describe their clinical uses	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, General Medicine	
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic : Clinical Pathology, Number of competencies: (03), Number of procedures that require certification : (NIL)									
PA23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	S	SH	Y	DOAP session	Skill Assessment			
PA23.2	Describe abnormal findings in body fluids in various disease states	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	S	SH	Y	DOAP session	Skill Assessment			
Topic:, Gastrointestinal tract, Number of competencies: (07), Number of procedures that require certification: (NIL)									
PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Dentistry	
PA24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA24.3	Describe and identify the microscopic features of peptic ulcer	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Hepatobiliary system, Number of competencies: (06), Number of procedures that require certification: (01)									
PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clincial manifestations, complications and consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA25.3	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	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.5	Describe the etiology, pathogenesis and complications of portal hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA25.6	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 session	Skill assessment	1	General Medicine	
Topic: Respiratory system, Number of competencies: (07), Number of procedures that require certification: (NIL)									
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology,, General Medicine	Microbiology
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA26.6	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung and pleura	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	K	KH	N	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Cardiovascular system, Number of competencies: (10), Number of procedures that require certification: (NIL)									
PA27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	S	SH	Y	DOAP session	Skill Assessment		Physiology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
Topic: Urinary Tract, Number of competencies: (16), Number of procedures that require certification: (NIL)									
PA28.1	Describe the normal histology of the kidney	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.2	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	Lecture, Small group discussion	Written/ Viva voce			
PA28.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.5	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	Lecture, Small group discussion	Written/ Viva voce		Physiology,, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.8	Enumerate and classify diseases affecting the tubular interstitium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, General Surgery	
PA28.11	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	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.12	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	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics	
PA28.13	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	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Male Genital Tract, Number of competencies: (05), Number of procedures that require certification: (NIL),									
PA29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings and diagnostic tests of benign prostatic hyperplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Female Genital Tract, Number of competencies: (09), Number of procedures that require certification: (NIL)									
PA30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.6	Describe the etiology and morphologic features of cervicitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.8	Describe the etiology and morphologic features of adenomyosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
PA30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics and Gynaecology	
Topic: Breast, Number of competencies: (04), Number of procedures that require certification: (NIL)									
PA31.1	Classify and describe the types, etiology, pathogenesis,	K	KH	Y	Lecture, Small group	Written/ Viva voce		Human Anatomy,	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
	pathology and hormonal dependency of benign breast disease				discussion			General Surgery	
PA31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	S	SH	N	DOAP session	Skill Assessment		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics, General Medicine	
Topic: Endocrine system, Number of competencies: (09), Number of procedures that require certification: (NIL)									
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology,, General Medicine, General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	K	KH	Y	Lecture, Small group	Written/ Viva voce		Physiology, General Medicine	
PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Bone and soft tissue, Number of competencies: (05), Number of procedures that require certification: (NIL)									
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	
PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Skin, Number of competencies: (04), Number of procedures that require certification: (NIL)									
PA34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology and Leprosy	
PA34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology and Leprosy	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA34.3	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	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology and Leprosy	
PA34.4	Identify, distinguish and describe common tumors of the skin	S	SH	N	DOAP session	Skill Assessment		Dermatology, Venereology and Leprosy	
Topic: Central Nervous System, Number of competencies:(03), Number of procedures that require certification: (01)									

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Eye, Number of competencies: (01), Number of procedures that require certification:(NIL)									
PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Ophthalmology	
Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication., Column D: K – Knows, KH - Knows How, S - Shows how, P- performs independently, Column F: DOAP session – Demonstrate, Observe, Assess, Perform. Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation									
INTEGRATION									
HUMAN ANATOMY									
AN5.8	Define thrombosis, infarction and aneurysm	K	KH	N	Lecture	Written		Pathology	Physiology
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	Lecture, Practical	Written		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
AN70.1	Identify exocrine gland under the microscope and distinguish between serous, mucous and mixed acini	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN70.2	Identify the lymphoid tissue under the microscope and describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN71.1	Identify bone under the microscope, Classify various types and describe the structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
AN71.2	Identify cartilage under the microscope and describe various types and structure- function correlation of the same describe various types and structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
PHYSIOLOGY									
PY1.4	Describe apoptosis – programmed cell death	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.5	Describe different types of anemia and Jaundice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	Biochemistry

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PY2.8	Describe the physiological basis of hemostasis and anticoagulants. Describe bleeding and clotting disorders (Hemophilia, purpura)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	Lecture, Small group discussion, ECE- Visit to blood bank	Written/ Viva voce		Pathology	
PY2.11	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	S	SH	Y	DOAP sessions	Practical/ OSPE/ viva voce		Pathology	
PY2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc	K	KH	Y	Demonstration	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration sessions	Written/ Viva voce		Pathology	
PY3.6	Describe the pathophysiology of Myasthenia gravis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
BIOCHEMISTRY									
BI2.4	Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	
BI2.5	Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI2.6	Discuss use of enzymes in laboratory investigations (Enzyme based assays)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI2.7	Interpret laboratory results of enzyme activities and describe the	K	KH	Y	Lecture, Small group	Written/ Viva voce		Pathology,	
	clinical utility of various enzymes as markers of pathological conditions				discussion / DOAP sessions			General Medicine	
BI3.8	Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI5.2	Describe and discuss functions of proteins and structure function relationships in relevant areas e. g., hemoglobin and selected hemoglobinopathies	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI7.7	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI8.1	Discuss the importance of various dietary components and explain importance of dietary fiber	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.2	Describe the types and causes of protein energy malnutrition and its effects	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.4	Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules and its importance)	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Community Medicine, General Medicine, Pediatrics	
BI10.1	Describe the cancer initiation, promotion oncogenes and oncogene activation	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics and Gynaecology, General Surgery, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI10.2	Describe various biochemical tumor markers and the biochemical basis of cancer therapy	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics and Gynaecology, General Surgery, Pathology	
BI10.3	Describe the cellular and humoral components of the immune system and describe the types and structure of antibody	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics and Gynaecology, General Surgery, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI10.4	Describe and discuss innate and adaptive immune responses, self / non-self-recognition and the central role of T-helper cells in immune responses	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	Physiology
BI10.5	Describe antigens and concepts involved in vaccine development	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, Pediatrics, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: diabetes mellitus, dyslipidemia, myocardial infarction, renal failure, gout, proteinuria, nephrotic syndrome, edema, jaundice, liver diseases, pancreatitis, disorders of acid base balance, thyroid disorders	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
MICROBIOLOGY									
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic heart disease and infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI2.4	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala azar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI2.7	Describe the epidemiology, the etio-pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.6	Describe the etio-pathogenesis of Acid Peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis, and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis	K	KH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis.	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
FM2.1	Define, describe and discuss death and its types including somatic / clinical / cellular, molecular and brain-death, Cortical death and Brainstem death	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pathology
FM2.2	Describe and discuss natural and unnatural deaths	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pathology
FM2.3	Describe and discuss issues related to sudden natural deaths	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM2.5	Discuss moment of death, modes of death-coma, asphyxia and syncope	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pathology
FM2.11	Describe and discuss autopsy procedures including postmortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written / Viva voce/ OSPE			Pathology
FM2.12	Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal postmortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written / Viva voce/ OSPE			Pathology
FM2.13	Describe and discuss obscure autopsy	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM3.28	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	Lecture, Small group discussion	Written / Viva voce		Obstetrics and Gynaecology, Pathology	
FM6.1	Describe different types of specimens 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	Lecture, Small group discussion	Written / Viva voce			Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
FM14.7	Demonstrate and identify that a particular stain is blood and identify the species of its origin	S	KH	Y	Small group discussion, Lecture	Log book/ skill station/ Viva voce		Forensic Medicine, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO and RH blood group of a person	S	SH	Y	Small group discussion, DOAP session	Log book/ skill station/ Viva voce		Forensic Medicine, Physiology	
DERMATOLOGY, VENEREOLOGY AND LEPROSY									
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment	1	General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating	K	KH	Y	Lecture, Small group	Written/ Viva voce			Microbiology,

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
	features and classification of Urticaria and angioedema				discussion				Pathology
DR16.1	Identify and distinguish skin lesions of SLE	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
DR16.2	Identify and distinguish Raynaud's phenomenon	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
ANESTHESIOLOGY									
AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pathology	General Surgery
EN1.2	Describe the pathophysiology of common diseases in ENT	K	KH	Y	Lecture, Small group	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
					discussion, DOAP session				
OP7.2	Describe and discuss the aetio- of pathogenesis, stages maturation and complications of cataract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
OP8.1	Discuss the aetiology, pathology, and clinical features management of vascular occlusions of the retina	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Pathology	
DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	K	K	N	Lecture, Small group discussion	Viva voce		Pathology	ENT

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DE4.2	Discuss the role of etiological factors in the formation of precancerous / cancerous lesions	K	KH	Y	Lecture, Small group discussion	Viva voce		Pathology	ENT
DE4.3	Identify potential pre-cancerous / cancerous lesions	S	SH	N	Observation, Bed side clinics	Skill assessment		Pathology	ENT
DE4.4	Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.	A/C	SH	Y	DOAP session	Document in Logbook	2	Pathology	ENT
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including rheumatic/ valvular, ischemic, hypertrophic inflammatory	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM1.2	Describe and discuss the genetic basis of some forms of heart failure	K	KH	N	Lecture, Small group discussion	Written		Pathology, Physiology	
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.4	Stage heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM1.5	Describe, discuss and differentiate the processes involved in R vs L heart failure, systolic vs diastolic failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac re modelling and neurohormonal adaptations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrythmias, anemia, thyrotoxicosis, dietary factors drugs etc.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM1.8	Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM2.2	Discuss the aetiology of risk factors both modifiable and non-modifiable of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture , Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	written		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including CBC with differential, 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 routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.16	Enumerate the indications 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	Lecture, Small group discussion	written		Pathology	
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment	S	SH	N	skills lab	logbook documentation/ DOAP session		Pathology	
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	K	Y	Lecture, Small group discussion	Written / Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM5.6	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM5.12	Choose and interpret appropriate diagnostic tests including CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases	S	KH	Y	Bedside clinic, DOAP session	Skill assessment		Pathology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic, Small group discussion	viva voce/ written		Pathology, Microbiology	
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bed side clinic, DOAP session, Small group discussion	written/ Skill assessment		Pathology, Microbiology	
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM7.1	Describe the pathopyhsiology of autoimmune disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM7.2	Describe the genetic basis of autoimmune disease	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM7.16	Enumerate the indications for and interpret the results of CBC, anti CCP (Anti-cyclic citrullinated peptide), RA, ANA, DNA and other tests of autoimmunity	K	SH	Y	Bed side clinic, small group	Skill assessment/ written		Pathology	
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM8.3	Describe and discuss the genetic basis of hypertension	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.4	Define and classify hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.5	Describe and discuss the differences between primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.8	Describe, discuss and identify target organ damage due to hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.6	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment/ written		Pathology	
IM9.7	Describe the appropriate diagnostic work up based on the presumed aetiology	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM9.8	Describe and discuss the meaning and utility of various components of the hemogram	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.9	Describe and discuss the various tests for iron deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.10	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.11	Describe, perform and interpret a peripheral smear and stool occult blood	S	SH	P	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM9.12	Describe the indications and interpret the results of a bone marrow aspirations and biopsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.13	Describe, develop a diagnostic plan to determine the aetiology of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.18	Describe the indications for blood transfusion and the appropriate use of blood components	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM10.1	Define, describe and differentiate between acute and chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.3	Describe the pathophysiology and causes of prerenal ARF, renal and post renal ARF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.4	Describe the evolution, natural history and treatment of ARF	K	KH	Y	Lecture, small group	Written/ Viva voce		Pathology	
IM10.5	Describe and discuss the aetiology of CRF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.6	Stage Chronic Kidney Disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.10	Describe and discuss the association between CKD glycemia and hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM10.16	Enumerate the indications for and interpret the results of renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap	K	KH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)	S	SH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors, economic impact and clinical evolution of type 2 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM11.11	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	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment		Pathology	
IM11.12	Perform and interpret a capillary blood glucose test	S	P	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment	2	Pathology, Biochemistry	
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick	S	P	Y	Bed side clinic, DOAP session	Skill assessment	2	Pathology, Biochemistry	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	Lecture, Small group discussion	short notes		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM13.1	Describe the clinical epidemiology and inherited and modifiable risk factors for common malignancies in India	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Biochemistry	
IM13.2	Describe the genetic basis of selected cancers	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM13.4	Describe the natural history, presentation, course, complications and cause of death for common cancers	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pathology	
IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.3	Describe and discuss the monogenic forms of obesity	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.4	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	Lecture, Small group discussion	Short note/ Viva voce		Pathology, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM14.5	Describe and discuss the natural history of obesity and its complications	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	General Surgery
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed	S	SH	Y	DOAP session, Small group discussion, Lecture	Written/ Viva voce/ Skill assessment		Pathology	General Surgery
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology, Physiology	General Surgery

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM15.9	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, DOAP session, Small group discussion	Skill assessment/ Short note/ Viva voce		Pathology	General Surgery
IM15.11	Develop document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion and specific therapy for arresting blood loss	S	KH	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery
IM15.13	Observe cross matching and blood / blood component transfusion	S	SH	Y	Bedside clinic	Short note/ Viva voce/ Skill assessment		Pathology	General Surgery
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel, sexual history and other concomitant illnesses	S	SH	Y	Bedside clinic skills lab	Skill assessment		Microbiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM16.15	Distinguish, based on the clinical presentation, Crohn's disease from ulcerative colitis	S	SH	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	General Surgery

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group, Bedside clinic	Skill Assessment		Microbiology, Pathology	
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non-hemorrhagic stroke	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM18.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident	S	SH	Y	Bedside clinic	Skill assessment		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM25.7	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 routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
OBSTETRICS AND GYNAECOLOGY									
OG10.2	Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management	K	KH	Y	Lecture, Small group discussion			Pathology	
PEDIATRICS									
PE11.1	Describe the common etiology, clinical features and management of obesity in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry, Pathology	
PE11.2	Discuss the risk approach for obesity and discuss the prevention strategies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE12.7	Describe the causes, clinical features, diagnosis and management of deficiency /excess of Vitamin D (Rickets and Hypervitaminosis D)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.8	Identify the clinical features of dietary deficiency of Vitamin D	S	P	Y	Bedside clinics, Skills lab	Document in logbook	3	Biochemistry, Physiology Pathology	
PE12.9	Assess patients with Vitamin D deficiency, diagnose, classify and plan management	S	SH	Y	Bed side clinics	Document in logbook		Biochemistry, Physiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE12.13	Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.14	Describe the causes, clinical features, diagnosis, management and prevention of Deficiency of Vitamin K	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE13.1	Discuss the RDA, dietary sources of Iron and their role in health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Biochemistry	
PE13.2	Describe the causes, diagnosis and management of Fe deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology Biochemistry	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE13.3	Identify the clinical features of dietary deficiency of Iron and make a diagnosis	S	SH	Y	Bed side clinics, Skill Lab	Document in logbook		Pathology, Biochemistry	
PE13.4	Interpret hemogram and Iron Panel	S	P	Y	Bed side clinic, Small group discussion	Skill Assessment	5	Pathology, Biochemistry	
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE21.2	Enumerate the etio-pathogenesis, clinical features, complications and management of Acute post streptococcal Glomerular Nephritis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE21.3	Discuss the approach and referral criteria to a child with Proteinuria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.5	Enumerate the etio-pathogenesis clinical features, complications and management of Acute Renal Failure in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.6	Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic renal Failure in Children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.7	Enumerate the etio-pathogenesis clinical features, complications and management of Wilms Tumor	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE21.11	Perform and interpret the common analytes in a Urine examination	S	SH	Y	Bed side clinic Labs, Skill lab	Skill assessment		Biochemistry, Pathology	
PE23.1	Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases –VSD, ASD and PDA	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.2	Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE23.3	Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.4	Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.5	Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE25.1	Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in children and its causes including celiac disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.4	Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE26.9	Interpret Liver Function Tests, viral markers, ultra-sonogram report	S	SH	Y	Bedside clinics, Skills lab	Skill Assessment		Pathology	
PE29.1	Discuss the etio-pathogenesis, clinical features, classification and approach to a child with anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.2	Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.3	Discuss the etiopathogenesis, clinical features and management of VIT B12, Folate deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE29.4	Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.6	Discuss the cause of thrombocytopenia in children: describe the clinical features and management of Idiopathic Thrombocytopenic Purpura (ITP)	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE29.7	Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.8	Discuss the etiology, clinical presentation and management of Acute Ly pm hoblastic Leukemia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.9	Discuss the etiology, clinical presentation and management of lymphoma in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
GENERAL SURGERY									
SU2.1	Describe pathophysiology of shock, types of shock, principles of resuscitation including fluid replacement and monitoring	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
SU3.1	Describe the indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce.		Pathology	
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU22.2	Describe the etiopathogenesis of thyroidal swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	
RESPIRATORY MEDICINE									
CT2.1	Define and classify obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CT2.11	Describe, discuss and interpret pulmonary function tests	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Physiology, Pathology	
ORTHOPAEDICS									
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) Acute Suppurative arthritis d) Septic arthritis and HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/ S H	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	General surgery

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
OR4.1	Describe and discuss the clinical features, investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine	K	K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		Pathology	General surgery
OR10.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures	K	K/KH	Y	Lecture, Small group discussion, Video assisted interactive lecture	Written/ Viva voce OSCE		Pathology	General surgery, Radiotherapy

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
RADIOTHERAPY									
RT1.3	Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, General Medicine
RT4.5	Describe and discuss role of radiation in management of common malignancies in India (region specific)	K	KH	Y	Lecture and Bed side clinic	Written/ Viva voce		Pathology	General Surgery, Obstetrics and Gynaecology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
RT4.6	Describe and discuss radiotherapy for benign disease	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, Obstetrics and Gynaecology
RT4.7	Counsel patients regarding acute and late effects of radiation and supportive care	K/A/S	KH	Y	Bed side clinic, Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics and Gynaecology
RT5.1	Describe and discuss cancer prevention, screening, vaccination, cancer registry	K	K	Y	Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics and Gynaecology

Modifications are made as per the National Medical Commission (Under Graduate Medical Education Board, 2023) Notification No. U. 14021/8/2023-UGMEB dated 1st August 2023

SR NO	COMPETENCY	POST-REVISION (Dated 1st Aug 2023)
1.	AETCOM	2.4 A - Demonstrate ability to work in a team of peers and superiors. 2.4 B - Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers. 2.6- Identify, discuss and define medico-legal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support. 2.7-Identify, discuss and defend medico-legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures.
2.	Teaching hours	Duration of lectures- 80 hours Small group learning - 165 hours Self-directed learning - 10 hours Total learning hours - 255 hours

UNIVERSITY THEORY EXAMINATION PATTERN

Paper I and II | **Section A and B** | **Marks – 100** | **Time : 3 Hrs.**

Type of Question	Marks per question	No. of questions	Total marls
One sentence answer	1	5 out of 6	5
LAQ – PB (Compulsory)	10	1	10
LAQ (structured)	10	1 out of 2	10
Short notes	5	5 out of 6	25
	Total	**12**	**50**

Section A = 50 Marks, Section B = 50 Marks, **Total Marks =** 100 for each paper

UNIVERSITY PRACTICAL EXAMINATION PATTERN

Subjects	Practical	Viva	Total
Pathology	70	30	100

PAPER-I		
Sr. No.	**Topic**	**Number**
1	Introduction to Pathology	PA1.1- PA1.2- PA1.3
2	Cell Injury and Adaptation	PA2.1, PA2.2, PA2.3, PA2.4, PA2.5, PA2.6 PA2.7, PA2.8
3	Amyloidosis	PA3.1, PA3.2
4	Inflammation	PA4.1, PA4.2, PA4.3, PA4.4
5	Healing and repair	PA5.1
6	Hemodynamic disorders	PA6.1, PA6.2, PA6.3, PA6.4, PA6.5, PA6.6, PA6.7
7	Neoplastic disorders	PA7.1, PA7.2 PA7.3 PA7.4 PA7.5
8	Basic diagnostic cytology	PA8.1, PA8.2, PA8.3
9	Immunopathology and AIDS	PA9.1, PA9.2, PA9.3, PA9.4, PA9.5, PA9.6, PA9.7
10	Infections and Infestations	PA10.1, PA10.2, PA10.3, PA10.4
11	Genetic and paediatric diseases	PA11.1, PA11.2, PA11.3
12	Environmental and nutritional diseases	PA12.1, PA12.2, PA12.3

13	Introduction to haematology	PA13.1, PA13.2, PA13.3, PA13.4, PA13.5
14	Microcytic anaemia	PA14.1, PA14.2, PA14.3
15	Macrocytic anaemia	PA15.1, PA15.2, PA15.3, PA15.4
16	Haemolytic anaemia	PA16.1, PA16.2, PA16.3, PA16.4, PA16.5, PA16.6, PA16.7
17	Aplastic anaemia	PA 17.1, PA 17.2
18	Leukocyte disorders	PA18.1, PA18.2
19	Lymph node and spleen	PA19.1, PA19.2, PA19.3, PA19.4, PA19.5, PA19.6, PA19.7
20	Plasma cell disorders	PA20.1
21	Haemorrhagic disorders	PA21.1, PA21.2, PA21.3, PA21.4, PA21.5
22	Blood banking and transfusion	PA22.1, PA22.2, PA22.3, PA22.4, PA22.5, PA22.6, PA22.7

PAPER-II		
Sr. No.	**Topic**	**Number**
1	Clinical Pathology	PA23.1, PA23.2, PA23.3
2	Gastrointestinal tract	PA24.1, PA24.2, PA24.3, PA24.4, PA24.5PA24.6, PA24.6,
3	Hepatobiliary system	PA25.1, PA25.2, PA25.3, PA25.4, PA25.5, PA25.6
4	Respiratory system	PA26.1, PA26.2, PA26.3, PA26.4, PA26.5,PA26.6, PA26.7
5	Cardiovascular system	PA27.1, PA27.2 PA27.3, PA27.4, PA27.5PA27.6,PA27.7, PA27.8,PA27.9,PA27.10,
6	Urinary Tract	PA28.1, PA28.2, PA28.3, PA28.4, PA28.5, PA28.6, PA28.7, PA28.8, PA28.9, PA28.10, PA28.11, PA28.12, PA28.13, PA28.14, PA28.15, PA28.16
7	Male Genital Tract	PA29.1, PA29.2, PA29.3, PA29.4, PA29.5
8	Female Genital Tract	PA30.1, PA30.2, PA30.3, PA30.4 PA30.5, PA30.6, PA30.7, PA30.8, PA30.9
9	Breast	PA31.1, PA31.2, PA31.3, PA31.4
10	Endocrine system	PA32.1, PA32.2, PA32.3, PA32.4, PA32.5, PA32.6, PA32.7, PA32.8, PA32.9
11	Bone and soft tissue	PA33.1, PA33.2, PA33.3, PA33.4, PA33.5
12	Skin	PA34.1, PA34.2, PA34.3, PA34.4
13	Central Nervous system	PA35.1, PA35.2, PA35.3
14	Eye	PA36.1

INTEGRATION	
Human Anatomy	AN5.8, AN66.2, AN70.1, AN70.2, AN71.1, AN71.2
Physiology	PY1.4, PY2.5, PY2.8, PY2.9, PY2.11, PY2.12, PY2.13, PY3.6
Biochemistry	BI2.4, BI2.5, BI2.6, BI2.7, BI3.8, BI5.2, BI6.11, BI6.12, BI6.13, BI6.14, BI6.15, BI7.7, BI8.1, BI8.2, BI8.4, BI8.5, BI10.1, BI10.2, BI10.3, BI10.4, BI10.5, BI11.17
Microbiology	MI1.7, MI1.8, MI2.1, MI2.2, MI2.3, MI2.4 MI2.5, MI2.7, MI3 1, MI3.3, MI3.4, MI3.6 MI3.7, MI3.8, MI5.1, MI5.2, MI8.2, MI8.3
Community Medicine	CM8.1
Forensic Medicine & Toxicology	FM2.1, FM2.2, FM2.3, FM2.5, FM2.11, FM2.12, FM2.13, FM3.28, FM6.1, FM14.7,FM14.8
Dermatology, Venereology & Leprosy	DR12.7, DR14.1, DR16.1, DR16.2
Anaesthesiology	AS9.4
ENT	EN1.2
Ophthalmology	OP7.2, OP8.1
Dentistry	DE4.1, DE4.2, DE4.3, DE4.4,
General Medicine	IM1.1, IM1.2, IM1.3, IM1.4, IM1.5, IM1.6IM1.7, IM1.8, IM1.9, IM2.1, IM2.2, IM2.4, IM2.5, IM3.1, IM3.3, IM4.5, IM4.12, IM4.16,IM4.17, IM5.1, IM5.2, IM5.3, IM5.4, IM5.5 IM5.6, IM5.7, IM5.12, IM5.14, IM6.5, IM6.6 IM6.10, IM6.19, IM7.1, IM7.2, IM7.16, IM8.1, IM8.2, IM8.3, IM8.4, IM8.5, IM8.7,IM8.8, IM9.1, IM9.2, IM9.6, IM9.7, IM9.8, IM9.9, IM9.10

MICROBIOLOGY

MICROBIOLOGY

a. Competencies:

The undergraduate learner demonstrates:

- Understanding of role of microbial agents in health and disease,
- Understanding of the immunological mechanisms in health and disease,
- Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents,
- Knowledge of the principles and application of infection control measures,
- An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.
- Knowledge of outbreak investigation and its control.

b. Broad subject specific objectives

At the end of the course the student will be able to:

- Explain how the different microorganisms can cause human infection.
- Understand commercial, opportunistic and pathogenic organisms and describe host parasite relationship.
- Describe the characteristics (morphology, cultural characteristics, resistance, virulence factors, incubation period, mode of transmission etc.) of different microorganisms.
- Explain the various defence mechanisms of the host against the microorganisms which can cause human infection.
- Describe the laboratory diagnosis of microorganisms causing human infections and disease.

- Describe the prophylaxis for the particular infecting microorganisms

c. Skills

At the end of the course the student shall be able to

- Plan the laboratory investigations for the diagnosis of infectious diseases.
- Perform laboratory procedures to arrive at the etiological diagnosis of infectious diseases caused by bacteria, fungi, viruses and parasites including the drug sensitivity profile.
- Perform and interpret immunological and serological tests,
- Operate routine and sophisticated instruments in the laboratory.
- Develop micro-teaching skills and Pedagogy
- Successfully implement the chosen research methodology

d. Integration:

The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.

MICROBIOLOGY (CODE: MI)

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MICROBIOLOGY									
Topic: General Microbiology and Immunity, Number of competencies: (11), Number of procedures that require certification : (01)									
MI1.1	Describe the different causative agents of Infectious diseases+A208, the methods used in their detection, and discuss the role of microbes in health and disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI1.2	Perform and identify the different causative agents of Infectious diseases by Gram Stain, ZN stain and stool routine microscopy	S	P	Y	DOAP session	Skill assessment	5		
MI1.3	Describe the epidemiological basis of common infectious diseases	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI1.4	Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
MI1.5	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	Small group discussion, Case discussion	Written / Viva voce/ OSPE		General Surgery	
MI1.6	Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology
MI1.9	Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.10	Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.11	Describe the immunological mechanisms of transplantation and tumor immunity	K	KH	Y	Lecture	Written/ Viva voce			
Topic: CVS and Blood, Number of competencies: (7), Number of procedures that require certification : (NIL)									
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic Heart Disease and infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI2.4	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.6	Identify the causative agent of malaria and filariasis	K/S	SH	Y	DOAP session	Skill assessment		General Medicine	
MI2.7	Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
Topic: Gastrointestinal and hepatobiliary system, Number of competencies: (8), Number of procedures that require certification : (NIL)									
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Paediatrics	Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI3.2	Identify the common etiologic agents of diarrhea and dysentery	S	SH	Y	DOAP session	Skill assessment		General Medicine, Paediatrics	
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers	K	KH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
Topic: Musculoskeletal system skin and soft tissue infections, Number of competencies: (3), Number of procedures that require certification : (NIL)									
MI4.1	Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
MI4.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone and joint infections	K	KH	Y	Lecture	Written/ Viva voce		Orthopaedics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI4.3	Describe the etio-pathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology and Leprosy, General Surgery	
Topic: Central Nervous System infections, Number of competencies: (3), Number of procedures that require certification : (NIL)									
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.3	Identify the microbial agents causing meningitis	S	SH	Y	DOAP session	Skill assessment		General Medicine, Pediatrics	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Respiratory tract infections, Number of competencies: (3), Number of procedures that require certification : (02)									
MI6.1	Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain and Acid fast stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
Topic: Genitourinary and Sexually transmitted infections, Number of competencies: (3), Number of procedures that require certification : (NIL)									
MI7.1	Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI7.2	Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology and Leprosy, Obstetrics and Gynaecology	
MI7.3	Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Topic: Zoonotic diseases and miscellaneous, Number of competencies: (16), Number of procedures that require certification : (01)									
MI8.1	Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology
MI8.4	Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
MI8.5	Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
MI8.6	Describe the basics of Infection control	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)	S	P	Y	DOAP session	Skill assessment	3 each in (Hand hygiene and PPE)	General Surgery	Community Medicine
MI8.8	Describe the methods used and significance of assessing the microbial contamination of food, water and air	K	KH	Y	Lecture, Small group discussion	Written/ Viva 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 method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
MI8.9	Discuss the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI8.10	Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing Infectious diseases	S	SH	Y	DOAP session	Skill assessment			
MI8.11	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	DOAP session	Skill assessment			
MI8.12	Discuss confidentiality pertaining to patient identity in laboratory results	A	KH	Y	Lecture, Small group discussion	Viva 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 method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
MI8.13	Choose the appropriate laboratory test in the diagnosis of the infectious disease	K	KH	Y	Small group discussions, Case discussion	Written/ Viva voce/ OSPE			
MI8.14	Demonstrate confidentiality pertaining to patient identity in laboratory results	A	SH	Y	DOAP session	Skill assessment		AETCOM	
MI8.15	Choose and Interpret the results of the laboratory tests used in diagnosis of the infectious diseas	K/S	SH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE			
MI8.16	Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)	K	K	Y	Lecture	Written/ Viva voce			Community Medicine
	*Causative agents of Infectious diseases are inclusive of bacterial, viral, parasites and fungal agents causing various clinical conditions.								

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently, Column F: DOAP session – Demonstrate, Observe, Assess, Perform. Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation									
INTEGRATION									
BIOCHEMISTRY									
BI10.5	Describe antigens and concepts involved in vaccine development.	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
PATHOLOGY									
PA7.5	Describe the immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive Airway Disease (OAD) and bronchiectasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology, microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.10	Describe the etiology, pathophysiology, pathology features and	K	KH	N	Lecture, Small group	Written/ Viva voce		General Medicine	Microbiology
	complications of syphilis on the cardiovascular system				discussion				

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology
PHARMACOLOGY									
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine Pediatrics	Microbiology
PH1.45	Describe the dugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology and Leprosy	Microbiology
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology
PH1.48	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV	K	KH	Y	Lecture	Written / Viva voce			Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
COMMUNITY MEDICINE									
CM3.3	Describe the aetiology and basis of water borne diseases/ jaundice/hepatitis/ diarrheal diseases	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Microbiology, General Medicine, Pediatrics	
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	S	SH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Microbiology	
CM5.7	Describe food hygiene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures	S	SH	Y	Small group discussion, DOAP sessions	Written/ Skill assessment		General Medicine	Microbiology
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
CM14.1	Define and classify hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology
CM14.2	Describe various methods of treatment of hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology
CM14.3	Describe laws related to hospital waste management	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DERMATOLOGY, VENEREOLOGY AND LEPROSY									
DR6.1	Describe the etiology pathogenesis and diagnostic features of pediculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of dermatophytes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.2	Identify candida species in fungal scrapings and KOH mount	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology
DR8.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR9.1	Classify, describe the epidemiology, etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of Leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology, Community Medicine
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.2	Identify spirochete in a dark ground microscopy	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Microbiology
DR10.6	Describe the etiology, diagnostic and clinical features of non - syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR10.7	Identify and differentiate based on the clinical features non - syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.8	Enumerate the indications and describe the pharmacology,	K	KH	Y	Lecture, Small group	Written/ Viva voce		General Medicine	Pharmacology,
	indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)				discussion				Microbiology
DR11.1	Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology Microbiology
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology, Pathology
DR15.2	Identify staphylococcus on a gram stain	S	SH	Y	Bedside clinic	Skill assessment			Microbiology

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
DR15.3	Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	Microbiology, Pharmacology
DENTISTRY									
DE1.2	Discuss the role of causative microorganisms in the aetiopathogenesis of dental caries	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology	
DE1.4	Discuss the role of dental caries as a focus of sepsis	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology, General Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
GENERAL MEDICINE									
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology, Pharmacology	
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.2	Discuss and describe the aetiology of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	KH	Y	Lecture , Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM3.7	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	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.14	Perform and interpret a sputum gram stain and AFB	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM3.19	Discuss, describe and enumerate the indications and communicate to patients on pneumococcal and influenza vaccines	S/C	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and co-morbidities on the febrile response	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel	K	K	Y	Lecture, Small group discussion	Written		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	Written		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.8	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	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.9	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 medication use	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including CBC with differential, 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 routine and culture and QBC	K	SH	Y	Bedside clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
IM4.13	Perform and interpret a sputum gram stain	S	SH	Y	DOAP session	Logbook documentation		Microbiology	
IM4.14	Perform and interpret a sputum AFB	S	SH	Y	DOAP session	Logbook documentation		Microbiology	
IM4.15	Perform and interpret a malarial smear	S	SH	Y	DOAP session	Logbook documentation / Skill assessment		Microbiology	
IM4.19	Assist in the collection of blood and wound cultures	S	SH	Y	DOAP session	Logbook/ documentation		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM4.20	Interpret a PPD (Mantoux)	S	SH	Y	DOAP session	Logbook/ documentation		Microbiology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs	S	SH	Y	Small group discussion	Skill assessment		Microbiology, Pharmacology	
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic,Small group discussion	Viva voce/ Written		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM5.17	Enumerate the indications precautions and counsel patients on vaccination for hepatitis	K/C	SH	Y	written Small group discussion	Written/ Viva voce		Microbiology	
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.2	Define and classify HIV AIDS based on the CDC criteria	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bedside clinic, DOAP session, Small group discussion	Written/ Skill assessment		Pathology, Microbiology	
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM6.14	Perform and interpret a gram stain of the sputum	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM6.17	Describe and discuss the principles of HAART, the classes of antiretroviral used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.18	Describe and discuss the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	Short notes/ Viva voce		Pathology, Microbiology	General Surgery
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non-infectious causes	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM6.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM16.10	Identify Vibrio cholera in a hanging drop specimen	S	SH	Y	DOAP session	Skill Assessment		Microbiology	
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Microbiology	
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lectures, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group discussion, Bedside clinic	Skill Assessment		Microbiology, Pathology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic disease (e. g. Leptospirosis, Rabies) and non-febrile infectious disease (e. g. Tetanus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.2	Describe and discuss the common causes pathophysiology and	K	K	Y	Lecture, Small group	Written		Microbiology,	
	manifestations of these diseases				Discussion			Community Medicine	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM25.9	Assist in the collection of blood and other specimen cultures	S	SH	Y	DOAP session	Logbook documentation		Microbiology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology	
PEDIATRICS									
PE19.1	Explain the components of the Universal immunization Program and the sub National Immunization Programs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE19.3	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE21.1	Enumerate the etio-pathogenesis clinical features, complications and management of Urinary Tract infection in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.6	Discuss the causes, clinical presentation and management of persistent diarrhoea in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.12	Perform and interpret stool examination including Hanging Drop	S	P	N	Bed side clinics, Skills lab	logbook	2	Microbiology	
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE26.12	Discuss the prevention of Hep B infection – Universal precautions and Immunisation	K	KH	Y	Lecture, Small group discussion activity	Written/ Viva voce		Microbiology	
PE30.1	Discuss the etio-pathogenesis, clinical features, complications, management and prevention of meningitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.2	Distinguish bacterial, viral and tuberculous meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.13	Discuss the etio-pathogenesis, clinical features, management and prevention of Poliomyelitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.21	Interpret and explain the findings in a CSF analysis	S	SH	Y	Small group discussion	Logbook		Microbiology	Respiratory Medicine
PE34.1	Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE34.2	Discuss the various diagnostic tools for childhood tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.6	Identify a BCG scar	S	P	Y	Bed side clinics, Skills lab	Skill Assessment	3	Microbiology	Respiratory Medicine

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
PE34.7	Interpret a Mantoux test	S	P	Y	Bed side clinics Skills lab	Skill assessment	3	Microbiology	Respiratory Medicine
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis	S	SH	N	Bed side clinics, Small group discussion	Logbook		Microbiology	Respiratory Medicine
PE34.10	Discuss the various samples for demonstrating the organism e.g. Gastric Aspirate, Sputum, CSF, FNAC	K	KH	Y	Bed side clinics, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.11	Perform AFB staining	S	P	Y	DOAP session	Logbook / journal	3	Microbiology	Respiratory Medicine
PE34.12	Enumerate the indications and Discuss the limitation of methods of culturing M. Tuberculii	K	KH	Y	Small group discussion	Written/ Viva voce		Microbiology	
GENERAL SURGERY									
SU6.1	Define and describe the aetiology and pathogenesis of surgical infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate Indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
SU14.1	Describe aseptic techniques, sterilization and disinfection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU15.1	Describe Classification of hospital waste and appropriate methods of disposal	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
ORTHOPAEDICS									
	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections	K/S	K/KH/SH	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	
OR3.1	a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis and HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis								
RESPIRATORY MEDICINE									

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CT1.2	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	Lecture, Small group discussion	Written		Microbiology	
CT1.3	Discuss and describe the impact of confection with HIV and other comorbid conditions like diabetes on the natural history of tuberculosis	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology, Pharmacology	

Number	Competency The student should be able to	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	Vertical Integration	Horizontal Integration
CT1.7	Perform and interpret a PPD (Mantoux) and describe and discuss the indications and pitfalls of the test	S	P	Y	DOAP session	Maintenance of logbook		Microbiology	
CT1.10	Perform and interpret an AFB stain	S	P	Y	DOAP session	Skill assessment	1	Microbiology	
CT1.12	Enumerate the indications for tests including serology, special cultures and polymerase chain reaction and sensitivity testing	K	KH	Y	Small group discussion, Lecture	Short note/ Viva voce		Microbiology	
CT1.13	Describe and discuss the origins, indications, technique of administration, efficacy and complications of the BCG vaccine	K	KH	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	

Modifications are made as per the National Medical Commission (Under Graduate Medical Education Board, 2023) Notification No. U. 14021/8/2023-UGMEB dated 1st August 2023

List of competencies related AETCOM

Guideline for Competency Based Undergraduate Training Program in Microbiology Previous and changed version			
SR NO:	**CONTENT**	**REVISION**	**MAJOR CHANGES**
1.	**AETCOM**	MI 8.12): Discuss confidentiality pertaining to patient identity in lab results (MI 8.14) Discuss confidentiality pertaining to patient identity in lab results (MI 8.14) DOAP. **AETCOM Foundation of Communication II** Focused small group discussion (Module 2.2 A): Describe and discuss the role of non-malfeasance as a guiding principle in patient care. (Module 2.2 B): Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care. (Module 2.2 C): Describe and discuss the role of beneficence of a guiding principle inpatient care. (Module 2.2 D): Describe and discuss the role of a physician in health care system. (Module 2.2 E):Describe and discuss the role of justice as a guiding principle in patient Care. (Module 2.3): Describe and discuss the role of justice as a guiding principle in patient care (Module 2.5): Identify, discuss and defend medico-legal, socio- cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care.	The concept of non-malfeasance is introduced in AETCOM classes The concept and the importance of autonomy, beneficence, role of physician and role of justice is introduced in revised curriculum.
2.	Teaching Hours:	Duration of lectures- 70 hours Small group learning - 135 hours Self-directed learning - 10 hours Total learning hours - 215 hours	

UNIVERSITY THEORY EXAMINATION PATTERN

Paper I and II | **Section A and B** | **Marks – 100** | **Time : 3 Hrs.**

Type of Question	Marks per question	No. of questions	Total marls
One sentence answer	1	5 out of 6	5
LAQ – PB (Compulsory)	10	1	10
LAQ (structured)	10	1 out of 2	10
Short notes	5	5 out of 6	25
	Total	**12**	**50**

Section A = 50 Marks, Section B = 50 Marks, **Total Marks =** 100 for each paper

UNIVERSITY PRACTICAL EXAMINATION PATTERN

Subjects	Practical	Viva	Total
Microbiology	70	30	100

DISTRIBUTION OF PAPER I AND II

The following topics and competencies are included:

THEORY PAPER I:

Sr. No.	Topic	Competencies
a	General Microbiology and Immunity	MI 1.1 : MI 1.11
b	CVS and Blood	MI 2.1 : MI 2.7
c	Gastrointestinal and hepatobiliary system	MI 3.1: MI 3.8

THEORY PAPER II

Sr. No.	Topic	Competencies
a	Musculoskeletal system, skin and soft tissue infections	MI 4.1: MI 4.3
b	Central Nervous System infections	MI 5.1: MI 5.3
c	Respiratory tract infections	MI 6.1: MI 6.3
d	Genitourinary and Sexually transmitted infections	MI 7.1: MI 7.3
e	Zoonotic diseases and miscellaneous	MI 8.1: MI 8.16