

CURRICULUM OF PATHOLOGY

MBBS COURSE

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INTRODUCTION

Pathology subject will be covered during third year and fourth year. Pathology is taught with its clinical application and use in clinical subjects. Due to nature of this subject educational strategies of diverse approaches are employed. Educational resources like videos, biological specimens, microscopy slides, books and journals are used to learn this diverse subject. Early clinical exposure is used for clinical application of Pathology.

Third year and fourth year are divided in three educational terms which conclude at with formative assessment test. End of year is University exam for summative assessment.

EDUCATIONAL HOURS

Year	Theory	Practical	Total
3rd year	150 hours (100 Lecture, 50 SGD / PBL)	100 hours	250
4th year	150 hours (100 Lecture, 50 SGD / PBL)	100 hours	250
Total	300 hours in 36 weeks/year	200 hours	500 hours
Strategy	Lectures Problem based learning Small group discussion Case based discussion	Laboratory session Microscopy sessions Clinical sessions Audio video sessions	

LEARNING OUTCOMES

AT THE END OF CURRICULUM STUDENT WILL BE ABLE TO

EDUCATION STRATEGIES

The educational strategies in this curriculum are multiple and aligned with domain of learning and according to the desired outcome

Interactive lectures

One-third of the curriculum will be delivered in a traditional didactic format including PowerPoint presentations and case discussions. Didactic education is considered to be a one-way transmission of material from teacher to learner, we cannot overlook the possibility of meaningful interaction between experts and learners during live lectures. This type of interaction, which allows for immediate clarification of concepts and extension of knowledge, may be particularly important for novice learners who have relatively little exposure to the subject matter, such as our study population.

Problem based learning

A lot of emphasis is on case based discussion. Problem-based learning (PBL) is complex and heterogeneous. A wide variety of educational methods are referred as PBL. These include Lecture-based case, Case based lecture, Case based discussions, Problem or inquiry based and Closed loop or reiterative. Incorporation of case based discussion in teaching enhances the critical thinking and problem-solving skills. It also helps in developing a broader prospective of clinical case scenarios.

Small Group Discussion

Small group discussion provides a unique environment to achieve high standards in medical education. Activation of prior knowledge, exchange of ideas, and engagement at a higher cognitive level are assumed to result in deeper learning and better academic achievements by students.

Video sessions

Pathology is a subject which involves visual learning and formulating concepts. Video assisted learning sessions also provides opportunities to learn gross anatomy.

Laboratory Sessions

Laboratory sessions are important as they provide opportunity for experiential learning in terms of study of slides and identification of tissues

ASSESSMENT

MCQ's and SEQ's

Multiple choice question and short essay question test will be used at the end of part of curriculum to assess the learning of knowledge. These all assessment exercises will be formative. The written tests like Multiple-Choice Questions (MCQs) and Short-Essay Questions (SEQs) test formats are used for the assessment of cognitive domain. The MCQs are more objective and essentially select type of item response format. MCQs have a cueing effect, which promotes guessing and leads to higher scores. In addition, writing MCQs of higher cognitive level of problem solving is challenging. On the contrary, the SEQs are more subjective and have a supply or construct type item response format, which does not have any cueing effect and can effectively assess problem solving skills.

Clinical exam and OSCE

Short case and OSCE will be used to evaluate clinical skills and procedural skills at the ward end of placement. The OSCE is a method of clinical skill assessment, and it has been reported to be appropriate for assessing learning achievement levels in the psychomotor and emotional domains, which are difficult to evaluate with written examinations.

Viva Voce

Viva voce is used for assessment of knowledge and problem solving ability of students. This method is useful evaluating cognitive domain.

Assignments

Students of different year will be given assignment of different nature such as research and literature search and surveys

INTERNAL ASSESSMENT

- i. The weightage of internal assessment shall be 10% of totals marks.
- ii. Continuous internal assessment shall consist of evaluation at the end of each assignments, e.g. stages/sub-stage, class tests etc., attitudinal assessment from educational supervisors.
- iii. Assessment of knowledge, Skills and Attitude shall contribute toward internal assessment. Methods used to assess these domains shall include Multiple Choice Questions of one-best type, Short essay questions, Oral/Viva, and Practical/Clinical examinations.
- iv. The score of internal assessment shall contribute to the score in the final examination, Final university examination of each subject shall contribute 90 to total score, and the candidate shall pass in aggregate.
- v. Proper record of continuous internal assessment shall be maintained.

LEARNING RESOURCES

The department of pathology will require following resources for implementation resources:

- Human resource
- Instructors (faculty members)
- Curriculum coordinator curriculum secretary
- Infrastructure
- Lecture hall with AV aids
- Tutorial room with AV aids
- Museum with Pathology Specimens
- Pathology Lab with Pool of slides
- Simulated patients and simulated manikins
- Computers

LISTS OF CONTENT RESOURCES

- Pathological Basis of Disease by Kumar, Cortan and Robbins, 7th Ed., W.B. Saunders.
- Medical Microbiology and Immunology by Levinson and Jawetz, 9th Ed., Mc Graw-Hill.
- Medical Genetics by Jorde, 3rd Ed., Mosby.
- Clinical Pathology Interpretations by A. H. Nagi
- Pathological Basis of Disease by Kumar, Cotran, Robbins. 7th. Ed.
- Medical Microbiology and Immunology by Levinson and Jawetz, 9th Ed.
- Mc Graw-Hill
- Ackerman's Surgical Pathology
- Clinical Pathology Interpretations by A.H. Nagi
- Theory and Practice Of Histological Techniques by John D Bancroft
- District Laboratory Practice in Tropical Countries by Monica Cheesburgh, 2nd Ed. Part I & II
- Online Journals and Reading Materials through HEC Digital Library Facility.

CONTENTS MODULES

S.No	Topic
1	Module 1 Inflammation, Mediators of Inflammation
2	Module 2 Wound Healing
3	Module 3 Disorders of Circulation
4	Module 4 Microbiology
5	Module 5 Principles of antimicrobial action
6	Module 6 Genetics
7	Module 7 Growth Disorders/Neoplasia
8	Module 8 Immunology
9	Module 9 Blood vessels & heart
10	Module 10 Hematopoietic and lymphoid systems
11	Module 11 Respiratory system
12	Module 12 Oral cavity and GIT
13	Module 13 Urinary System
14	Module 14 Male Genital system
15	Module 15 Female Genital system
16	Module 16 Breast
17	Module 17 Musculoskeletal system
18	Module 18 Endocrine system
19	Module 19 Nervous system

IMPLEMENTATION

The curriculum will be spread over 2 year with 36 working weeks each year. During this period student will be exposed to various education strategies to achieve the learning objectives.

3rd Year.

In this year student will be exposed to do clinical laboratory, blood bank and Museum to develop understanding of general pathology and its applied aspects.

Theory (Lecture, SGD and PBL)	Practical (Early clinical exposure, Histo-Lab, Museum)
150 Hours (36 Weeks)	100 Hours

4th Year.

In this year student will be exposed to do clinical laboratory, blood bank and Museum to develop understanding of special pathology and its applied aspects.

Theory (Lecture, SGD and PBL)	Practical (Early clinical exposure, Histo-Lab, Museum)
150 Hours (36 Weeks)	100 Hours

Third Year			
	First term	Second term	Third term
1st Term			
2nd Term			
3rd Term			
Assessment			

Fourth Year			
	First term	Second term	Third term
1st Term			
2nd Term			
3rd Term			
Assessment			

PROGRAMME EVALUATION

Purpose of Evaluation

The major goals of the evaluation are to provide information that the students can use to achieve curricular objectives and that the faculty can use to monitor quality of and improve curriculum.

Design of Evaluation

The evaluation design as only posttest.

Users of evaluation: students, curriculum faculty, Principal Office

Resources: Curriculum faculty and departmental secretaries. No additional funding

Evaluation question:

- What percentage of students achieved 75% mandatory attendance?
- What percentage of students achieved pass marks in university exam?
- What are the strengths of the curriculum? What are the weaknesses? How can the curriculum can be improved?

Because of limited resources, the evaluation was kept simple. Data Collection was integrated into the curriculum schedule. The major goals of the evaluation are to provide information that the students can use to achieve curricular objectives and that the faculty can use to monitor quality of and improve curriculum. The evaluation design as only posttest.

End of curriculum evaluation form:

This will be filled by students and faculty members for evaluation of adequacy with each content was covered, whether they would recommend the curriculum to others and written comments on curriculum strengths, weaknesses and suggestions for improvements.

Annual Report:

Based on evaluation of the educational programe report will be generated annually and submitted to Medical Educational Department.

GENERAL PATHOLOGY AND MICROBIOLOGY

TABLE OF SPECIFICATION (ToS)		
Sr. No.	Topic Specification	MCQ's
1	Cell Injury	04
2	Inflammation and Mediators of inflammation	06
3	Healing and Repair	02
4	Disorder Of Circulation	04
5	Parasitology	05
6	Virology	06
7	General Bacteriology	04
8	Special Bacteriology	14
9	Mycology (Fungi)	04
10	Genetics	02
11	Disorders of Growth	09
12	Immunology	05
	Total	65

GENERAL PATHOLOGY AND MICROBIOLOGY

TABLE OF SPECIFICATION (ToS)		
Sr. No.	Topic Specification	SEQ's
1	Acute and Chronic Inflammation	01
2	Cellular Adaptations, Cellular injury and Cell Death	01
3	Inflammation and Repair	01
4	Disorders of Circulation	01
5	Genetic Disorders	01
6	Neoplasma	01
7	Immunology	01
8	Bacteriology	03
9	Bacteriology (Mycobacteria)	01
10	Parasitology	01
11	Mycology	01
12	Virology	01
	Total	14

GENERAL PATHOLOGY AND MICROBIOLOGY

General Pathology	7 Stations
Microbiology	9 Stations
Observe	7 Station
Total	20 Station

TABLE OF SPECIFICATION (ToS for OSPE)

Sr. No.	Topic	No. of Staion
1	Acute and Chronic Inflammation	01
2	Cellular Adaptations, Cellular injury and Cell Death	01
3	Cellular Adaptations	01
4	Pigmentation / Intracellular accumulation / Calcification.	01
5	Neoplasia	02
6	Hemodynamics - Thrombosis, Embilism, Infarction, Congestion.	01
7	Culture Media	02
8	Gram stained slide	01
9	ZN Stained slide	01
10	Biochemical reaction	01
11	Photograph / Instrument / Report related to microbiology	01
12	Photograph of specimen of a Helminth / protozoa	01
13	Microscopic slide of ovum / egg ./ cyst	01
14	Photograph / Instrument / Report related to immunology	01
15	Examination of urine	01
16	Slide Coagulase Test	01
17	Catalase Test	01
18	Snear Preparation for staining	01

MBBS SECOND PROFESSIONAL GENERAL PATHOLOGY AND MICROBIOLOGY

FORMAT		
Sr. No.	COMMENTS	MARKS
1	OSPE 16 Stations (16 non-observed stations related to practicals (each of 04 marks)	64
2	Observed Practical Microbiology	16
3	STRUCTURED VIVA VOCE (related to curriculum	50 25+25 (External + Internal)
4	ANNUAL WORK BOOK	05 (External)
5	CONTINUOUS INTERNAL ASSESSMENT	15
	Total	150

SPECIAL PATHOLOGY

TABLE OF SPECIFICATION (Theory)			
Sr. No.	Topic Specification	MCQ's	SEQ's
1	Cardio-Vascular system		
	Aneurysms of blood vessels	1	1
	Heart failure	1	
	Rheumatic heart Disease	1	
	Ischemic Heart disease	1	
Pericardial disease tumors of heart or blood vessels	1		
2	Hematology		
	RBC Disorders	2	1
	WBC Disorders	2	
Bleeding and coagulation disorders	1		
3	Respiratory system		
	Disease of vascular origin	1	1
	Chronic obstructive pulmonary disease	1	
	Pulmonary Infections	1	
Tumors	2		
4	Oral cavity and Gastro-intestinal Tract		
	Oral Cavity	2	2
	Peptic Ulcer	1	
	CA Stomach	1	
	Appendix	1	
	Esophages	1	
	CA intestine	1	
	Inflammatory Bowel disease	1	
Pancreatitis	1		
5	Hepatobiliary system		
	Infectious Diseases	2	1
	Cirrhosis	1	
	Jaundice and cholesterol	1	
Hepatocellular CA	1		
6	Urinary system		
	Glomerular Diseases	2	1
	Disease affecting tubules	1	
	Tumors	1	
Urinary Bladder	1		
7	Male genital system		
	Testies	2	1
Prostate	3		
8	Female genital system		
	Cervix	1	1
	Endometrium	2	
Ovary	2		

SPECIAL PATHOLOGY

TABLE OF SPECIFICATION (Theory)			
Sr. No.	Topic Specification	MCQ's	SEQ's
9	Diseases of breast		
	Inflammation	1	1
	Carcinoma breast	4	
10	Endocrinology		
	Pituitary	1	
	Thyroid Gland	3	1
	Adrenal Gland	1	
11	Musculo-Skeletal system and bones & joints		
	Muscular Dystrophy	1	
	Disease of peripheral nerve	1	1
	Arthritis	1	
	Tumor of Bones	1	
12	Central Nervous system		
	Tumors	2	1
13	Clinical chemistry		
	Diabetic Ketoacidosis	1	
	Cardiac Function Tests	1	1
	Renal Function tests	1	
14	Skin		
	Tumors	1	1
	Total	65	14

MBBS THIRD PROFESSIONAL SPECIAL PATHOLOGY

FORMAT		
Sr. No.	COMMENTS	MARKS
1	OSPE 20 Stations (Histopathology 10, Hematology 5, Chemical Pathology 5)	80
2	STRUCTURED VIVA VOCE (related to curriculum)	50 25+25 (External + Internal)
3	ANNUAL WORK BOOK	05 (External)
4	CONTINUOUS INTERNAL ASSESSMENT	15
	Total	150

Contents	Objectives	Do-main	Strategy	Assess-ment
Module 1: Inflammation, Mediators of Inflammation	<ul style="list-style-type: none"> • Role of inflammation in the defense mechanisms of the body. • Vascular changes of acute inflammation and their relation to morphological and tissue effects. • Process of Chemotaxis, Opsonization and Phagocytosis. • Role of cellular components in inflammatory exudate. • Exudates and transudate. • Important chemical mediators of inflammation. • Pathway of Arachidonic Acid metabolism. • Role of products of Arachidonic acid metabolism in inflammation. • Mechanism for development of fever, with reference to exogenous and endogenous pyrogens. • Chronic inflammation including Granulomas. • Granuloma and its types along with causes. • Systemic effects of acute and chronic inflammation and their possible outcomes. • Significance of ESR. • Induced hypothermia in medicine. • Healing in specialized tissue. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p>	<p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p>
Module 2: Wound Healing	<ul style="list-style-type: none"> • Repair and regeneration. • Wound healing by first and second intention. • Factors that influence the inflammatory reparative response. • Wound contraction and cicatrization. • Formation of granulation tissue. • Complications of wound healing. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p> <p>LEC/SGD</p>	<p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p> <p>SEQ/MCQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 3: Disorders of Circulation	<p>a. Thrombo-embolic disorders and their modalities</p> <ul style="list-style-type: none"> Etiology and pathogenesis of thrombosis. Possible consequences of thrombosis Difference between thrombi and clots Classification of emboli according to their composition. Difference between arterial and venous emboli. <p>b. Hemorrhage, Hyperemia and Congestion</p> <ul style="list-style-type: none"> Definitions of common types of Hemorrhage Types of hyperemia Difference between hyperemia and congestion <p>c. Infarction</p> <ul style="list-style-type: none"> Types of infarction Difference between anemic and hemorrhagic infarct Morphological picture of infarction in different organ systems <p>d. Disorders of the circulation and shock</p> <ul style="list-style-type: none"> Edema, ascites, hydrothorax and anasarca. Pathophysiology of edema with special emphasis on CHF. Pathogenesis of four major types of shock (Hypovolemic, cardiogenic, vasovagal & septic) and their causes. Compensatory mechanisms involved in shock. 	<p>C2</p> <p>C2</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C2</p> <p>C2</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>Lecture</p> <p>Lecture</p> <p>Lecture</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 4: Microbiology	<ul style="list-style-type: none"> • Defence mechanisms of the body. • Microbial mechanisms of invasion and virulence. • Difference between sterilization and disinfection. • Methods of disinfection and sterilization of the following: <ol style="list-style-type: none"> a. Facility where the doctor practices, b. Examination table, c. Any spillage e.g. sputum, vomitus, stool, urine, blood, d. Examination tools, e.g., thermometer, nasal and ear specula and spatula, • Principles of aseptic techniques such as Venepuncture, urinary catheterization, bandaging, suturing and lumbar puncture. • Universal precautions for infection control. • General principles of the following serological tests: <ol style="list-style-type: none"> a. ELISA – Hepatitis (A,B,C,D,E,G) Rubella, CMV and HIV b. PCR c. Haemagglutination – TPHA d. Western Blot –HIV Malaria. 8. Interpretation of : <ol style="list-style-type: none"> a. Culture reports b. Serological reports and c. Microscopic reports of gram stain and ZN stain. • Principles of proper collection and submission of specimens for laboratory investigations • General characteristics and taxonomy of Bacteria, Rickettsia, Chlamydia, Viruses and Fungi. • Communicable, Endemic, Epidemic, and Pandemic Diseases, Carriers Pathogens, Opportunists, Commensals and Colonizers. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p> <p>MCQ / SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 4: Microbiology				
<ul style="list-style-type: none"> ● Common organisms causing CNS Infections (i) Bacteria: Streptococcus pneumoniae, Beta hemolyticus srteptococcus group-b, Neisseria meningitides, Haemophilis influenzae Mycobacterium tuberculosis. E.coli, Listeria monocytogenes (ii) Viruses: Enterovirus, Mumps Herpes Adenovirus (iii) Fungus: Cryptococcus neoformis (iv) Protozoa Malaria Toxoplasma ● Common organisms causing respiratory tract infection (i) Bacteria: Streptococcus pneumoniae, Beta hemolyticus streptococcus group b Diphtheria sp., Bordetella sp. Hemophilus influenzae, Mycobacterium tuberculosis Klebsiella, Legionella, Mycoplasma pneumoniae (ii) Viruses: Herpes Adeno virus Measles Influenza Para influenza Rhinovirus RSV (iii) Protozoa: Pneumocystic carinii ● Organisms causing gastrointestinal tract infection / infestation (i) Bacteria: Clostridium difficile Mycobacterium tuberculosis Salmonella, Shigella Vibrio cholera, Vibrio parahemolyticus Campylobacter jejuni Helicobacter pylori (ii) Viruses: Hepatitis A Rota, Astro (iii) Fungus: Cryptococcus neoformis (vi) Protozoa: Giardia lamblia Entameba histolytica Cryptosporidium ● Common organisms causing hepatic infections (i) Bacteria: Streptococcus species, Coliforms, Anaerobes (ii) Viruses: Herpes, Hepatitis A, B, C, D, E CMV, EBV (iii) Protozoa: Entameba histolytica, Tape worms, Echinococcus granulosus ● Common organisms causing skin infection (i) Bacteria: Staphylococcus aureus, Streptococcus pyogenes, Actinomyces israeli, Nocardia asteroides, Mycobacterium tuberculosis, Mycobacterium leprae, Corynebacterium diphtheriae (ii) Viruses: Herpes, Measles Rubella, Chicken pox, Moluscum contagiosum (iii) Fungus: Candida albicans, Tinea species (iv) Arthropods: Sarcoptes scabiei, Pediculus species, Cinex lectularius (v) Helminths: Filaria species, Strongyloides stercoralis, Schistosoma sp. (vi) Protozoa: Leishmania species. 	C3	SGD / Lec	MCQ / SEQ	
		C3	SGD / Lec	MCQ / SEQ
		C3	SGD / Lec	MCQ / SEQ
		C2	SGD / Lec	MCQ / SEQ
		C2	SGD / Lec	MCQ / SEQ

Contents	Objectives	Domain	Strategy	Assessment
Module 4: Microbiology				
<ul style="list-style-type: none"> • Common organisms causing bone and joint infection • Bacteria: Staph aureus, Streptococcus pyogenes, Haemophilus influenzae, Neisseria gonorrhoeae, Brucella melitensis, Salmonella typhi, Strep. pneumoniae, Pseudomonas sp. and Mycobacterium tuberculosis. • Common organisms causing genital infection <ul style="list-style-type: none"> (i) Bacteria: Mycoplasma urealyticum (ii) Viruses: Pox, Herpes, Hepatitis B, HIV (iii) Fungus: Candida albicans (iv) Arthropods: Sarcoptes scabiei (v) Protozoa: Tricomonas vaginalis • Common organisms causing zoonosis <ul style="list-style-type: none"> (i) Viruses: Rabies, (ii) Protozoa: Toxoplasma gondii, Leishmania sp. (iii) Helmenthics: Echinococcus sp. 	C3 C3 C3	SGD / Lec SGD / Lec SGD / Lec	MCQ / SEQ MCQ / SEQ MCQ / SEQ	
Module 5: Principles of anti-microbial action.				
<ul style="list-style-type: none"> • Antibiotics, selective toxicity, bacteriostatic and bactericidal. • Host determinants in relation to selection of an antimicrobial drug for therapy. • Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) • Bacterial resistance and the mechanisms involved in acquiring bacterial resistance • Mechanisms involved in transfer of drug resistance to bacterial resistance. • Mode of action of various antimicrobial drug groups. • Superinfection and cross sensitivity 	C3 C3 C3 C3 C3 C3 C3	SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ	

Contents	Objectives	Domain	Strategy	Assessment
Module 6: Genetics				
	<ul style="list-style-type: none"> Common sex linked, autosomal recessive and autosomal dominant disorders. Common genetic mutations. Diseases associated with consanguineous marriages. Molecular biology techniques. 	C3 C3 C3 C3	SGD / Lec SGD / Lec SGD / Lec SGD / Lec	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
Module 7: Growth Disorders/Neoplasia				
	<ul style="list-style-type: none"> Atrophy and Hypertrophy, Agenesis, Dysgenesis, Aplasia, Hypoplasia, Hyperplasia, Metaplasia, Dysplasia, Neoplasia, Anaplasia,. Cell cycle and cell types (stable, labile, permanent) Mechanisms controlling cell growth Classification systems of tumors. Characteristics of benign and malignant tumors Difference between Carcinoma and Sarcoma. Grading and staging system of tumors. Biology of tumor growth Process of carcinogenesis Host defense against tumors. Mechanism of local and distant spread. Local and systemic effects of tumors. Tumor markers used in the diagnosis and management of cancers. Common chemical, physical agents and viruses related to human cancer. Epidemiology of common cancers in Pakistan. Radiation and its effects on tissues. Cancer screening. 	C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3	SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ

Contents	Objectives	Domain	Strategy	Assessment
<p>Module 8: Immunology</p> <ul style="list-style-type: none"> • Antigen, antibody, epitope, hapten and adhesion molecules. • Difference between innate and acquired immunity. • Structure and function of major histocompatibility complex (MHC). • Cytokines. • Mechanism of humoral and cell mediated immunity. • Hypersensitivity reactions, Type I, Type II, Type III and Type IV. • Autograft, homograft, allograft and xenograft. • Immunotolerance and immunoparalysis. • Mechanism involved in allograft rejection and steps that can be taken to combat rejection. • Classification of Immunodeficiency disorders • Basis of autoimmunity. • Tissue transplantation. • Pathology and pathogenesis of AIDS. • Lab diagnosis of immunological diseases. 		<p>C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3</p>	<p>SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB SGD/LAB</p>	<p>MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 9: BLOOD VESSELS & HEART				
<ul style="list-style-type: none"> Atherosclerosis Etiology and pathogenesis, Early lesion, Late and complicated lesion, Vessels affected, Complications Monkeberg's medial calcific sclerosis Arteriosclerosis. Hypertension Classification, Causes of secondary hypertension, Vascular changes in hypertension. Common pathogenetic mechanisms of vasculitis. Aneurysm Classification, Etiology. Atherosclerotic aneurysm Pathogenesis, Type of vessel involved, Morphological & clinical features Varicose veins Common sites, Predisposing factors, Clinical features. Benign and malignant tumours of blood vessels. Pathogenesis of ischemic heart disease. Myocardial infarction Sequence of changes in myocardial infarction (M.I), Pattern of elevation of biochemical markers used in the evaluation of M.I, Complications. Causes of sudden cardiac death. Cor-pulmonale Predisposing disorders. Rheumatic Endocarditis Bacterial Endocarditis Etiology, Pathogenesis, Morphological & clinical features, Complications Myocarditis. Morphological and clinical features of myocarditis. Cardiomyopathy Dilated, Hypertrophic, Restrictive. Pericarditis. Clinical and morphological feature of pericarditis. Primary & secondary cardiac tumours. Fallop's tetralogy Coarctation of aorta 	<p>C3</p> <p>C3 C3 C3</p> <p>C3 C3</p> <p>C3</p> <p>C3</p> <p>C3 C3 C3</p> <p>C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3</p> <p>C3 C3 C3 C3 C3</p>	<p>SGD / Lec</p> <p>SGD / Lec SGD / Lec SGD / Lec</p> <p>SGD / Lec SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec SGD / Lec SGD / Lec</p> <p>SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec</p> <p>SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec</p> <p>SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ</p>	

Contents	Objectives	Domain	Strategy	Assessment
Module 10: HEMATOPOIETIC AND LYMPHOID SYSTEMS				
<ul style="list-style-type: none"> Stages in the formation of red blood cell and white blood cells. Normal values of red cell count, Hemoglobin level, Packed cell volume, MCH, MCV, MCHC, WBC Count, Platelet count, Anemia Classification, Causes, Etiology, Blood picture, clinical features and Lab Diagnosis of, Iron deficiency anemia, Megaloblastic anemia, Folate deficiency anemia, Vit. B12 deficiency anemia, Anemia of chronic disease, Nutritional deficiency anemia. Hereditary spherocytosis, Incidence, Etiology, Pathogenesis, Morphological and Clinical features Thalassemia, Classification, Pathogenesis, Blood picture, Clinical and genetic features. Hemolytic anemia Glucose-6-phosphate dehydrogenase deficiency. Immunohemolytic anemia. Warm and cold antibodies immunohemolytic anemias. Aplastic anemia, Etiology, Pathogenesis, Clinical features, Lab. Diagnosis. Neutropenia Agranulocytosis Leukocytosis Infectious mononucleosis, Epidemiology, Morphology, Clinical features. Acute and chronic nonspecific lymphadenitis. Non-hodgkin’s lymphoma, Classification (real and working formulations) Hodgkin’s disease, Classification, Clinical stages, Etiology and pathogenesis Leukemia Prognostic factors of acute lymphoblastic and acute myeloblastic leukemias. Pathophysiology of chronic myeloid and chronic lymphocytic leukemias Multiple myeloma, Etiology, Pathogenesis, Morphology, Clinical features Disseminated intravascular coagulation, Etiology, Pathogenesis, Clinical features, Laboratory diagnosis Causes of decreased production and decreased survival of platelets. Idiopathic & thrombotic thrombocytopenic purpura Value of following tests in the assessment of bleeding disorders Bleeding time, Clotting time, Platelets count, Platelet function test, Partial thromboplastin time, Prothrombin time, Mixing test studies Polycythemia, Etiology, Pathogenesis, Clinical significance, Lab. Diagnosis ABO and Rhesus blood groups Screening of Donors Hazards of blood transfusion and their prevention. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>	

Contents	Objectives	Domain	Strategy	Assessment
Module 11: RESPIRATORY SYSTEM				
	<ul style="list-style-type: none"> • Micro-organisms causing upper respiratory tract infection. • Etiology and clinical features of; Rhinitis, Nasal polyps, Acute pharyngitis, Acute tonsillitis, Acute bacterial epiglottitis, Acute laryngitis, Pleural effusion, Hemothorax, Hydrothorax, Pleuritis, Pneumothorax, Chylothorax Malignant & benign tumours of nasopharynx and larynx. • Atelectasis, • Classification, Pathogenesis • Restrictive & obstructive lung disease • Etiology pathogenesis, morphology & clinical features of; Asthma, Various types of emphysema, Chronic bronchitis, Bronchiectasis, Adult respiratory distress syndrome, Restrictive lung diseases, Sarcoidosis, Hypersensitivity pneumonitis, Idiopathic pulmonary fibrosis, Goodpasture's syndrome, Thromboemboli, Pulmonary infarction, Pulmonary hypertension and vascular sclerosis. • Acute bacterial pneumonia. • Micro-organisms causing atypical pneumonia. • Etiology, pathogenesis & clinical features of; Tuberculosis of the lung, Pneumoconiosis • Fungi (candida, pneumocystis carinii) causing lung infections. • Bronchogenic carcinoma and mesothelioma • Classification, Etiology, Pathogenesis, Clinical features 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 12: THE ORAL CAVITY AND GASTROINTESTINAL TRACT				
<ul style="list-style-type: none"> • Oral cavity • Leukoplakia, Oral cancer, Risk factors, Morphology, Clinical feature. • Benign and malignant tumours of salivary glands. • Pleomorphic adenoma, Clinical features, Morphology • Esophagus • Predisposing factors of esophagitis, Carcinoma of the esophagus • Stomach, • Etiology, pathogenesis, morphological and clinical features of ; • Acute gastritis • Chronic gastritis, Peptic ulcer, Gastric carcinoma, Risk factors, Pathogenesis, Morphology • Clinical features and diagnosis, Prognosis. • Intestine • Etiology, pathogenesis, morphological and clinical features of, Hirschsprung's disease, Celiac sprue, Tropical sprue, Ischemic bowel disease, Crohn's disease, Ulcerative colitis. • Acute appendicitis • Major causes of intestinal obstruction. • Clinico-pathological features of following diseases of intestine • Amebiasis, Tuberculosis, Typhoid • Non-neoplastic polyps of intestine. • Adenomas • Classification on the basis of epithelial architecture, Clinical and morphological features • Colorectal carcinoma • Classification, Etiology, Pathogenesis, Morphological and clinical features, Aster-Coller classifications of carcinoma of the colon and rectum, • Carcinoid tumour • Peak incidence, Most prevalent sites in the gut, Morphological features, Clinical features of carcinoid syndrome. • Etiology, pathogenesis, morphological and clinical features of tumours of appendix. • Liver and Biliary Tract • Liver, Pathway of bilirubin metabolism and its elimination from the body, Jaundice, Classification, Causes, Clinical features, Lab diagnosis, Intrahepatic and extrahepatic biliary obstruction. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>	

Contents	Objectives	Domain	Strategy	Assessment
Module 12: THE ORAL CAVITY AND GASTROINTESTINAL TRACT				
	<ul style="list-style-type: none"> Etiology, pathogenesis, morphology, clinical features and complication of; Hepatic failure, Cirrhosis, Viral hepatitis A,B,C,D and E Route of transmission, Incubation period, Clinical features. Potential outcome of acute infection. Carrier state, Acute and chronic hepatitis. Etiology, morphological and clinical features of liver abscess. Drugs and toxins causing hepatic injury Pathogenesis of alcohol liver disease. Morphological and clinical features of alcoholic hepatitis and cirrhosis. Classification, etiology, pathogenesis, morphological and clinical features of; Hemochromatosis, Secondary hemochromatosis, Wilson's disease, Alpha-1 antitrypsin deficiency, Neonatal hepatitis, Primary and secondary biliary cirrhosis, Hepatocellular carcinoma Biliary tract Epidemiology, Pathogenesis, Morphology, Clinical features, Pathogenesis and risk factors of cholelithiasis. Morphological and clinical features of acute and chronic cholecystitis. Clinical and morphological features of gall bladder cancer. Pancreas, Acute and chronic pancreatitis, Etiology, Pathogenesis, Morphology, Clinical features. Clinical and morphological features of carcinoma of pancreas. 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p> <p>MCQ/SEQ MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 13: THE URINARY SYSTEM				
	<ul style="list-style-type: none"> Etiology, pathogenesis, clinical features and complications of: Azotemia, Uremia, Acute renal failure, Chronic renal failure, Polycystic kidney disease (its Classification), Glomerulonephritis (its Classification), Nephrotic and nephritic syndrome, Acute pyelonephritis, Chronic pyelonephritis, Hydronephrosis. Pathogenesis and clinical course of acute tubular necrosis. Benign and malignant nephrosclerosis Characteristics of various types of renal stones Pathogenesis, clinical features and lab diagnosis of nephrolithiasis Epidemiology, morphology, clinical features and prognosis of Wilm's tumour Classification, Epidemiology, morphology, clinical features and prognosis of renal cell carcinoma Etiology, morphology & clinical features of cystitis. Clinical features, etiology and morphology of transitional cell carcinoma of the urinary bladder. 	C3 C3 C3 C3 C3 C3 C3 C3 C3	SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec	MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ
Module 14: MALE GENITAL SYSTEM				
	<ul style="list-style-type: none"> Hypospadias Undescended testis Urethritis (Gonococcal, Non gonococcal) Etiology, Route of infection, Pathogenesis, Diagnosis Etiology, pathogenesis and natural history of; Prostatitis, Prostatic hyperplasia. Causes, pathogenesis and clinical features of scrotal swelling. Testicular adnexa, Varicocele, Hydrocele, Spermatocele, Testis and epididymis, Inflammation (Orchitis), Epididymitis. Causes, pathogenesis and relevant investigations of male infertility. Classification, pathogenesis, morphology, clinical features and prognosis of the tumours of the male genital tract (Prostate, Testis) 			

Contents	Objectives	Domain	Strategy	Assessment
Module 15: FEMALE GENITAL SYSTEM				
	<ul style="list-style-type: none"> • Causes, routes of infection & methods of diagnosis of sexually transmitted diseases. • Route of infection, pathogenesis and Lab diagnosis of; Gonorrhoea, Syphilis, Chlamydia, HPV, Herpes simplex, Trichomonas vaginalis. • Cervical intraepithelial neoplasia • Neoplasms of cervix • Causes, pathogenesis and clinical features of dysfunctional uterine bleeding with special reference to endometrial hyperplasia, endometrial polyp and carcinoma. • Etiology, clinical features and pathogenesis of; Adenomyosis, Endometriosis, Ectopic pregnancy, Toxemia of pregnancy. • Classification, pathogenesis, morphology, clinical features and prognosis of the tumours of the female genital tract (uterus, ovary and Gestational trophoblastic tumours). 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>
Module 16: BREAST				
	<ul style="list-style-type: none"> • Etiology and causes of lump in the breast • Etiology, Pathogenesis, Morphology and clinical features; Mastitis, Fibrocystic disease of the breast, Intraductal papilloma • Benign tumours of the breast (Fibroadenoma and Phylloides tumour) • Gynaecomastia • Carcinomas of the breast (Ductal and Lobular) 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 17: MUSCULOSKELETAL SYSTEM				
	<ul style="list-style-type: none"> Pathogenesis and clinical features of ; Achondroplasia, Osteogenesis imperfecta, Osteoporosis. Acute and chronic osteomyelitis Common causative micro-organism, Common routes of spread, Complications. Common sites involved in tuberculous osteomyelitis Pathogenesis, morphological and clinical features of Paget's disease (osteitis deformans). Benign and malignant bone forming tumours. Common sites, morphological and clinical features of osteogenic sarcoma. Benign and malignant cartilaginous tumours. Chondrosarcoma Peak incidence, Common sites of origin, Morphological and clinical features. Most frequent sites, clinical and morphological features of giant cell tumours of bone. Ewing's sarcoma Peak incidence, Common sites of origin, Chromosomal abnormality, Morphological and clinical features. Pathogenesis, morphological and clinical features of osteoarthritis Rheumatoid arthritis Pathogenesis, Morphological and clinical features, Lab Diagnosis Gout. Classification, Pathogenesis, Morphological and clinical features, Lab Diagnosis Pathogenesis, morphological and clinical features of; Duchenne muscular dystrophy, Myotonic dystrophy, Congenital myopathies, Inflammatory myopathies, Myasthenia gravis. Lipoma and liposarcoma. Rhabdomyosarcoma Peak incidence, Histological variants, Frequent sites 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
<p>Module 18: ENDOCRINE SYSTEM</p> <ul style="list-style-type: none"> Pituitary, Causes of hyperpituitarism, Morphology and clinical features of, Pituitary adenomas, Acromegaly, Gigantism. Causes of hypopituitarism, Etiology, pathogenesis and clinical features of, Sheehan's syndrome, Dwarfism, Etiology, clinical features, pathogenesis and lab findings in inappropriate secretion of ADH. Adrenal Cortex and Medulla Adrenal cortical hyperfunction. (CUSHING'S SYNDROME), Etiology, pathogenesis clinical features and lab diagnosis of; Conn's syndrome, Adrenogenital syndrome, Causes of hypofunction of adrenal cortex. Etiology, pathogenesis and clinical features of Addison's disease. Tumours of adrenal medulla and cortex. Clinical features and diagnosis of pheochromocytoma. Thyroid Etiology and clinical features of hyperthyroidism. Etiology and clinical features of hypothyroidism including Cretinism and Myxedema. Investigation / lab tests for diagnosis of thyroid dysfunction. Goiter and its types Etiology, pathogenesis and clinical features of diffuse and multinodular goiter. Causes of solitary thyroid nodule and its diagnostic approach. Thyroiditis Types, Pathogenesis, Morphology, Clinical features Etiology, pathogenesis, morphology and clinical features of: Follicular adenoma, Papillary carcinoma, Follicular carcinoma, Medullary carcinoma, Undifferentiated. Types of MEN syndromes. 	C3	SGD / Lec	MCQ/SEQ	

Contents	Objectives	Domain	Strategy	Assessment
<p>Module 18: ENDOCRINE SYSTEM</p>	<ul style="list-style-type: none"> • Parathyroid • Etiology and clinical features of hyperparathyroidism and hypoparathyroidism. • Primary, secondary and tertiary hyperparathyroidism. • Calcium homeostasis • Causes of hyper and hypocalcemia. • SKIN, Macule, papule, nodule, plaque, vesicle, bulla, blister, putsule, scale,lichenification, excoriation, hyperkeratosis, parakeratosis, acanthosis,dyskeratosis, acantholysis, papillomatosis, lentiginous spongiosis. • Morphological and clinical features of urticaria. • Etiology, pathogenesis morphological and clinical features of; Eczematous dermatitis, Contact dermatitis, Atopic dermatitis, Photoeczematus eruptions, Primary irritant dermatitis, Erythema multiforme, Psoriasis, Pemphigus, Bullous pemphigoid. • Premalignant epithelial lesions. • Types of warts and their most frequent locations. • Predisposing factors, morphology, clinical features and prognosis of; Squamous cell carcinoma, Basal cell carcinoma. • Types, clinical and morphological features of; Nevocellular Nevi, Dysplastic nevi. • Malignant melanoma • Classification, Frequent site of origin, Clinical and morphological features. 	<p>C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C3</p>	<p>SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec SGD / Lec</p>	<p>MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ MCQ/SEQ</p>

Contents	Objectives	Domain	Strategy	Assessment
Module 19: NERVOUS SYSTEM				
	<ul style="list-style-type: none"> • Clinico-pathological features of hydrocephalus. • Cerebral edema (vasogenic & cytotoxic). • Types of herniation of brain and their clinical significance. • Intra-cranial hemorrhage. • Etiologic agents, clinical and morphological features of; Acute purulent meningitis, Acute lymphocytic meningitis, Chronic meningitis, Brain abscess • Tuberculosis meningitis, Viral encephalitis • Clinico-pathological features of Guillain Barre syndrome. • Polymyopathies • Toxic neuropathy • Important intracranial tumours (astrocytoma, oligodendrogliomas, ependymoma, medulloblastoma and meningioma) • Clinical significance of glial tumours. • Frequent metastatic tumours to the brain • Primary peripheral nerve sheath neoplasms 	<p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p> <p>C3</p>	<p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p> <p>SGD / Lec</p>	<p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p> <p>MCQ/SEQ</p>

Domain	Level
Knowledge	C1 Knowledge C2 Comprehension C3 Application C4 Analysis C5 Synthesis C6 Evaluation
Psychomotor	P1 Observe P2 Practice P3 Adjust P4 Master P5 Develop P6 Construct
Affect	A1 Receiving A2 Responding A3 Valuing A4 Organization A5 Characterization