



PRAVARA INSTITUTE OF MEDICAL SCIENCES

(DEEMED TO BE UNIVERSITY)

Loni, Tal. Rahata, Dist. Ahmednagar 413736

NAAC Re-accredited with 'A' Grade

SYLLABUS

UG Programme- **PATHOLOGY**

MBBS- IInd year

(Competency Based Undergraduate Curriculum will be implemented from MBBS
Batch 2024-25)

Introduction:

The global competencies identified as defining the roles of the Indian Medical Graduate are the broad competencies that the learner has to aspire to achieve and dependent on these competencies Curriculum is designed

Course Code : Theory Paper I - MU 203

Theory Paper II - MU 204

Teaching Hours : 260

Distribution of teaching hours

Method of Interaction		Teaching Hours	
Lectures			80
Small Group discussions			170
	Practical (30)	90	
	Small Group Discussions	80	
Self-Directed Learning			10
Total			260

1. GOAL:

The goal of teaching pathology is to provide undergraduate students comprehensive knowledge of the causes and mechanisms of disease, in order to enable them to achieve complete understanding of morphology and clinical manifestations of the disease and applying this knowledge to diagnosis of the diseases.

2. EDUCATIONAL OBJECTIVES

The Objectives are dependent on competency to be achieved as per NMC

(a) Theory

The target is to develop knowledge and comprehensive level of cognitive domain and some part of application and analysis level of cognitive domain. So at the end of one and half years, the student should be able to

1. Describe the structure and ultra-structure of a sick cell, the mechanisms of the cell degradation, cell death and repair.
2. Correlate structural and functional alterations in the sick cell.

3. Explain the Patho-physiological processes which governs the maintenance of homeostasis, mechanism of their disturbances and the morphological and clinical manifestation associated with it.
4. Describe the mechanisms and patterns of tissue response to injury to appreciate the Patho-physiology of disease processes and their clinical manifestations.
5. Correlate the gross and microscopic alterations of different organ systems in common diseases to the extent needed to understand disease processes and their clinical significance.
6. Develop an understanding of neoplastic change in the body in order to appreciate need for early diagnosis and further management of neoplasia.
7. Understand mechanisms of common haematological disorders and develop a logical approach in their diagnosis and management.

(b) Small Group Discussions:

The target is to develop comprehension, application and analysis level of cognitive domain; some aspect of psychomotor and affective domain. So at the end of one and half years, the student shall be able to –

1. Recognize morbid anatomical and histopathological changes for the diagnosis of common disorders.
2. Describe the rationale and principles of technical procedures of diagnostic laboratory tests.
3. Interpret diagnostic laboratory tests and correlate with clinical and morphological features of diseases.
4. Draw a rational scheme of investigations aimed at diagnosing and managing common disorders.

3. DISTRIBUTION OF TEACHING HOURS:

Topics	Lectures	Small Group discussions		Self-Directed learning	Total
	hrs	Practical 3 Hrs each	Small Group Discussions/ Tutorials hrs		
General Pathology	29	09	20		
Haematology	14	06	10		
Systemic Pathology	37	13	26		
Clinical Pathology	00	02	08		
Miscellaneous	00	00	16		
Total	80	30 (90)	80	10	260

4. SYLLABUS

- ❖ There are 35 topics and 182 outcomes. These outcomes are known as competencies.
- ❖ The Syllabus is dependent on Bloom's Taxonomy of Educational objectives and Miller's Pyramid for level of competency Level.
- ❖ Competency:
 - The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.
 - In other words: What should you have? or What should have changed?
 - An observable ability of a health professional, integrating multiple components such as knowledge, skills, values and attitudes.
- ❖ Domain address
 - K – Knowledge
 - S – Skill
 - A – Attitude
 - C – Communication
- ❖ Level of competency required based on the Miller's pyramid

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

- ❖ Competency is core or desirable (Non-core)
- ❖ Action Verbs which identifies domain and level

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

❖ Sequential organization of course contents

The Broad area of study shall be:-

1. General Pathology
 1. Introduction to Pathology
 2. Cell Injury and Adaptation
 3. Inflammation
 4. Healing and Repair
 5. Haemodynamic disorder
 6. Neoplastic disorders
 7. Basic Diagnostic Cytology
 8. Immunopathology and AIDS
 9. Amyloidosis
 10. Infections and Infestations
 11. Genetics and Paediatric Diseases
 12. Environment Pathology and Nutritional Diseases
2. Haematology & Transfusion Medicine
 1. Introduction to Haematology and RBC abnormality
 2. RBC abnormality
 3. Leukocytic Disorder
 4. Haemorrhagic disorder
 5. Blood Banking and Transfusion Medicine
3. Systemic Pathology and Clinical Pathology
 1. Diseases of Cardio Vascular System
 2. Diseases of Respiratory System
 3. Diseases of GIT
 4. Diseases of Hepatobiliary System
 5. Clinical Pathology
 6. Diseases of Urinary Tract
 7. Central Nervous System
 8. Diseases of Lymphnode and Spleen
 9. Diseases of Male Genital Tract
 10. Diseases of Female Genital Tract
 11. Diseases of Breast
 12. Diseases of Endocrine
 13. Diseases of Bone and Soft Tissue
 14. Diseases of Skin
 15. Eye

1. Lectures:

Topic	Lecture No	Lecture	Competency No	Competency	Core	Level	Domain
01.Introduction to Pathology	L01	Introduction	1.1	Describe the role of a pathologist in diagnosis and management of disease	Core	K	K
			1.2	Enumerate common definitions and terms used in Pathology and Describe the history and evolution of Pathology	Core	K	K
			1.3	Describe proliferation and cell cycle and concept of regenerative medicine along with role of stem cells	Core	K	K
02.Cell Injury and Adaptation	L02	Causes and Mechanisms of Injury	2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	Core	KH	K
			2.2	Describe the etiology of cell injury. Distinguish between reversible- irreversible injury: mechanisms; morphology of cell injury	Core	KH	K
	L03	Reversible Injury	2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	Core	KH	K
	L04	Irreversible Injury I	2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	Core	KH	K
	L05	Irreversible Injury II	2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	NonCore	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
	L06	Pathological Calcification	2.5	Describe and discuss pathologic calcifications, gangrene	Core	KH	K
	L07	Growth Disorder	2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia (including carcinoma in situ)	Core	KH	K
03.Inflammation	L08	Acute inflammation I	3.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	Core	KH	K
	L09	Acute Inflammation II	3.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	Core	KH	K
	L10	Acute Inflammation III	3.2	Enumerate and describe the mediators of acute inflammation	Core	KH	K
	L11	Chronic Inflammation	3.3	Define and describe chronic inflammation including causes, types, non-specific and granulomatous; and enumerate examples of each	Core	KH	K
04. Healing and Repair	L12	Repair	4.1	Define and describe the process of repair and regeneration including wound healing and its types	Core	KH	K
05.Haemodynamic disorder	L13	Oedema	5.1	Define and describe edema, its types, pathogenesis and clinical correlations	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
	L14	Hyperaemia, Congestion and Shock	5.2	Define and describe hyperemia, congestion, hemorrhage	Core	KH	K
			5.3	Define and describe shock, its pathogenesis and its stages	Core	KH	K
	L15	Thrombosis	5.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	Core	KH	K
	L16	Embolism	5.5	Define and describe embolism and its causes and common types	Core	KH	K
	L17	Infarction	5.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	Core	KH	K
06. Neoplastic disorders	L18	Neoplasia I	6.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, Biologic, behaviour and spread. Differentiate between benign from malignant neoplasm	Core	KH	K
	L19	Neoplasia II	6.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, Biologic, behaviour and spread. Differentiate between benign from malignant neoplasm	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
	L20	Carcinogenesis I	6.2	Describe the molecular basis of cancer, role of genetic and epigenetic alterations with special emphasis on common cancers like breast/ colon	Core	KH	K
	L21	Carcinogenesis II	6.3	Enumerate carcinogens and describe the process of carcinogenesis	Core	KH	K
	L22	Carcinogenesis and Clinical Features	6.4	Describe the effects of tumor on the host including paraneoplastic syndrome	Core	KH	K
			6.6	Describe immunology and the immune response to cancer	Non Core	KH	K
06.Neoplastic disorders & 07.Basic Diagnostic Cytology	L23	Grading, Staging and Diagnosis of Neoplasia	6.5	Describe laboratory diagnosis of cancer and Grading & Staging of the tumour including molecular profiles of tumors, tumors markers and future of cancer diagnostics	Core	KH	K
			7.1	Describe the techniques of cytology, staining & diagnostic role of cytology and its application in clinical care	Core	KH	K
08.Immunopathology and AIDS	L37	Immunity and Hypersensitivity	8.1	Describe the principles and mechanisms involved in immunity	Core	KH	K
			8.2	Describe the mechanism of hypersensitivity reaction	Core	KH	K
	L38	Autoimmunity and SLE	8.4	Define autoimmunity. Enumerate autoimmune disorders	Core	KH	K
			8.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			8.7	Define and describe the pathogenesis of other common autoimmune diseases	Non core	KH	K
	L39	Immunity and Transplant rejection	8.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	Core	KH	K
	L40	AIDS	8.6	Define and describe the pathogenesis and pathology of HIV and AIDS	Core	KH	K
09.Amyloidosis	L36	Amyloidosis	9.1	Describe the pathogenesis and pathology of amyloidosis	Core	KH	K
			9.2	Identify and describe various forms of amyloidosis with their manifestations and consequences in gross and microscopic specimens			
10.Infections and Infestations	L42	Infections and Infestations I	10.1	Define and describe the pathogenesis and pathology of malaria	Core	KH	K
			10.3	Define and describe the pathogenesis and pathology of leprosy	Core	KH	K
	L43	Infections and Infestations II	10.2	Define and describe the pathogenesis and pathology of cysticercosis	Core	KH	K
			10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	Non Core	KH	K
			10.5	Define and describe the pathogenesis and pathology and laboratory findings in COVID.	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
11.Genetics and Paediatric Diseases	L41	Genetics	11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	Non core	KH	K
			11.2	Describe the pathogenesis and pathology of tumor and tumor like conditions in infancy and childhood	Npn Core	KH	K
			11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	Non core	KH	K
12.Environment Pathology and Nutritional Diseases	L44	Environment Pathology and Nutrition deficiency or excess	12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	Core	KH	K
			12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition, vitamins and starvation	Core	KH	K
			12.3	Describe the pathogenesis of obesity and its consequences	Core	KH	K
13.Introduction to Haematology and RBC abnormality	L24	Introduction to Haematology and Anaemia classification and investigations	13.1	Describe hematopoiesis including extramedullary hematopoiesis and the role of anticoagulants in hematology	Core	KH	K
			13.2	Define and classify anemia Enumerate and describe the investigation of anemia	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
14. Microcytic hypochromic anaemia	L25	Microcytic hypochromic anaemia	14.1	Describe iron metabolism Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	Core	KH	K
			14.2	Identify and describe the peripheral smear in microcytic anemia	Core	KH	K
15. Macrocytic anaemia	L26	Macrocytic anaemia	15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency. Describe laboratory investigations of macrocytic anemia	Core	KH	K
			15.2	Enumerate the differences and describe the etiology, laboratory features of megaloblastic anaemia and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	Core	KH	K
			15.3	Identify and describe the peripheral blood picture of macrocytic anemia	Core	SH	S
16. Haemolytic anaemia	L27	Haemolytic anaemia I	16.1	Define and classify hemolytic anemia Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Core	KH	K
			16.2	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
17. Aplastic anaemia	L28	Haemolytic anaemia II and Miscellaneous anaemias	16.3	Describe the etiology, pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia and different hemolytic Anemia's	Core	KH	K
			17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	Non Core	K	K
18.Leukocytic Disorder	L29	Leukocytic Disorder	18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	Core	KH	K
	L30	Leukaemias I	18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Core	KH	K
	L31	Leukaemias II	18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Core	KH	K
			20.3	Define and describe its laboratory findings and diagnosis of multiple Myeloma	Core	KH	K
19.Diseases of Lymphnode and Spleen	L71	Diseases of Lymphnode and Spleen I	19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	Core	KH	K
			19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			19.3	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	Core	KH	K
	L72	Diseases of Lymphnode and Spleen II	19.3	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	Core	KH	K
			19.4	Enumerate and differentiate the causes of splenomegaly	Core	KH	K
20.Haemorrhagic disorder	L32	Haemorrhagic disorder I	20.1	Describe normal hemostasis. Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	Core	KH	K
	L33	Haemorrhagic disorder II	20.1	Describe normal hemostasis. Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	Core	KH	K
			20.2	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	Core	KH	K
21Blood Banking and Transfusion Medicine	L34	Blood Banking I	21.1	Classify and describe blood group systems (ABO and RH)	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			21.2	Enumerate blood components and describe their clinical uses	Core	KH	K
			21.6	Describe the correct technique to perform blood grouping. Describe the correct technique to perform a cross match	Core	SH	S
	L35	Blood Banking II	21.3	Enumerate and describe infections transmitted by blood transfusion	Core	KH	K
			21.4	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	Core	KH	K
			21.5	Enumerate the indications and describe the principles and procedure of autologous transfusion	Core	KH	K
23.Diseases of GIT	L54	Diseases of GIT I	23.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	Non core	KH	K
			23.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of carcinoma esophagus	Core	KH	K
	L55	Diseases of GIT II	23.3	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	Core	KH	K
			23.4	Describe etiology and pathogenesis and pathologic features of carcinoma of the stomach	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
	L56	Diseases of GIT III	23.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine and appendicitis	Core	KH	K
			23.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	Core	KH	K
			23.7	Enumerate causes and describe laboratory diagnosis of malabsorption syndrome	Non Core	KH	K
	L57	Diseases of GIT IV	23.8	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	Core	KH	K
24.Diseases of Hepatobiliary System	L58	Jaundice	24.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Core	KH	K
	L59	Hepatitis	24.3	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	Core	KH	K
	L60	Cirrhosis and alcoholic liver disease	24.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			24.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	Core	KH	K
			24.5	Describe the etiology, pathogenesis and complications of portal hypertension	Core	KH	K
	L61	Tumours of Liver and Biliary tract	24.7	Define and describe the etiology, types, pathogenesis, morphology and complications of Hepatocellular Carcinoma	Core	KH	K
			24.8	Describe the pathophysiology, pathology and complications of acute cholecystitis and Cholelithiasis	Core	KH	K
25.Diseases of Respiratory System	L50	Pneumonia and Lung abscess	25.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	Core	KH	K
			25.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	Core	KH	K
	L51	Chronic Airway disease and Bronchiectasis	25.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
	L52	Tuberculosis and Occupational Lung Disease	25.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	Core	KH	K
			25.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	Core	KH	K
	L53	Tumours of Lung and Pleura	25.6	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 including mesothelioma.	Core	KH	K
26.Diseases of Cardio Vascular System	L45	Atherosclerosis, Aneurisms	26.01	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	Core	KH	K
			26.02	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	Core	KH	K
	L46	Ischaemic heart Disease, Heart Failure and Cardiac function Test	26.03	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			26.06	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease and Interpret abnormalities in cardiac function testing in acute coronary syndromes	Core	KH	K
	L47	Rheumatic Heart disease	26.05	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	Core	KH	K
	L48	Infective Endocarditis	26.07	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective Endocarditis	Core	KH	K
	L49	Pericarditis, pericardial effusion, Congenital heart disease cardiomyopathy and Tumours	26.08	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of Pericarditis and Pericardial effusion	Core	SH	S
			26.4	Describe the etiology, pathophysiology, pathology, gross and, complications of Congenital heart disease	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			26.09	Classify and describe the etiology, types, pathophysiology, pathology, gross pericardial effusion and microscopic features, diagnosis and complications of cardiomyopathies	Core	KH	K
			26.10	Describe the etiology, pathophysiology, pathology features and complications of tumors of cardiovascular system.	None Core	KH	K
27.Diseases of Urinary Tract	L62	Disease of kidney 1	27.01	Describe the normal histology of the kidney	Core	K	K
			27.02	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure	Core	KH	K
	L63	Diseases of kidney 2	28.05	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	Core	KH	K
	L64	Diseases of kidney 3	27.06	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			28.05	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	Core	KH	K
	L65	Diseases of kidney 4	27.03	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	Core	KH	K
			27.04	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	Core	KH	K
			27.05	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	Core	KH	K
			27.07	Enumerate and describe the findings in glomerular manifestations of systemic disease	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			27.09	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	Core	KH	K
	L66	Diseases of kidney 5	27.08	Enumerate and classify diseases affecting the tubular Interstitium	Core	KH	K
			27.1	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Core	KH	K
	L67	Diseases of kidney 6	27.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the Kidney	Core	KH	K
			27.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney	Core	KH	K
			27.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competency	Core	Level	Domain
			27.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	Non core	KH	K
	L68	Diseases of kidney 7	27.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal Tumors	Core	KH	K
			27.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	Non core	KH	K
28.Diseases of Male Genital Tract	L73	Diseases of Male Genital Tract	28.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	Core	KH	K
			28.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Core	KH	K
			28.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			28.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Core	KH	K
			28.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	Non core	KH	K
29.Diseases of Female Genital Tract	L75	Diseases of Cervix and Endometrium	29.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the Cervix	Core	KH	K
			29.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	Core	KH	K
			29.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and Leiomyosarcomas	Core	KH	K
			29.6	Describe the etiology and morphologic features of cervicitis	Non core	KH	K
			29.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Non core	KH	K
			29.8	Describe the etiology and morphologic features of adenomyosis	Non core	KH	K
			29.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Non core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
29.Diseases of Female Genital Tract	L76	Diseases of Ovary	29.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	Core	KH	K
			29.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	Core	KH	K
30.Diseases of Breast	L74	Diseases of Breast		Describe and identify the morphologic and microscopic features of Phyllodes tumor of the breast	Non core	SH	S
			30.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease.	Core	KH	K
			30.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	Core	KH	K
			30.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	Non core	KH	K
31.Diseases of Endocrine	L69	Diabetes Mellitus	31.5	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	Core	KH	K

Topic	Lecture No	Lecture	Competan cy No	Competancy	Core	Level	Domain
	L80	Diseases of Endocrine	31.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Core	KH	K
			31.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	Core	KH	K
			31.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/hypothyroidism	Core	KH	K
			31.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features & complications of Thyroid tumors	Core	KH	K
32.Diseases of Bone and Soft Tissue	L77	Diseases of Bone	32.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	Core	KH	K
			32.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			32.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	Non core	KH	K
	L78	Soft Tissue tumour and Rheumatoid Arthritis	32.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	Core	KH	K
			32.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	Non core	KH	K
			32.6	Classify and describe the etiology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of Osteo arthritis and Gouty arthritis	Non core	KH	K
33.Diseases of Skin	L79	Diseases of Skin	33.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin.	Core	KH	K
			33.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	Core	KH	K

Topic	Lecture No	Lecture	Competency No	Competancy	Core	Level	Domain
			33.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	Non core	KH	K
34. Central Nervous System	L70	CNS tumours	34.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of CNS Tumors	Core	KH	K

2. Small Group discussions:

- a. **Practicals**
- b. **Small Group discussions /Tutorials**

a. Practical:

Practical no	Practical	Competency no	Competency	Core	Domain	Level
P01	Histotechniques I	01.04E	Histotechniques I			
P02	Histotechniques II	01.05E	histotechnique II			
P03	Reversible Cell Injury	02.08	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	Core	S	SH
P04	Irreversible Cell Injury	02.08	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	Core	S	SH
P05	Acute Inflammation	03.04	Identify and describe acute and chronic inflammation in gross and microscopic specimens	Core	S	SH
P06	Chronic Inflammation and Repair	03.04	Identify and describe acute and chronic inflammation in gross and microscopic specimens	Core	S	SH
		04.01	Define and describe the process of repair and regeneration including wound healing and its types	Core	K	KH
P07	Hemodynamic disorders	05.01	Define and describe edema, correlations, its types, pathogenesis and clinical correlations	Core	S	SH
		05.02	Define and describe hyperemia, congestion, hemorrhage	Core	S	SH
		05.04	Define and describe normal haemostasis and the etio-pathogenesis and consequences of thrombosis	Core	S	SH
		05.05	Define and describe Ischemia/infarction, embolism its types, etiology, morphologic changes and clinical effects	Core	S	SH
		05.06	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	Core	S	SH
P08	Neoplasia I	02.06	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	Core	S	SH

Practical no	Practical	Competency no	Competency	Core	Domain	Level
			(including carcinoma in situ)			
		06.05	Describe laboratory diagnosis of cancer including molecular profiles of tumors, tumors markers and future of cancer diagnostics	Core	S	SH
		06.08E	Diagnosis of Neoplasia and Grading & Staging of the tumour	Core	S	SH
		07.03	Observe a diagnostic cytology and its staining and interpret the specimen	Core	S	SH
P09	Neoplasia II	06.07	Identify and describe the gross and microscopic features of Benign and malignant neoplasm in a pathologic specimen	Core	S	SH
		06.08E	Diagnosis of Neoplasia and Grading & Staging of the tumour	Core	S	SH
P10	Anticoagulants and Routine Haematological Tests I	13.03	Describe collection of specimens and identify coagulants and anticoagulant bulbs, instruments	Core	K	KH
		13.04	Perform common haematological tests – Hb, RBC count, WBC count and DLC	Core	K	KH
P11	Routine Haematological Tests II	13.04	Perform common haematological tests – Hb, RBC count, WBC count and DLC	Core	K	KH
P12	Investigations in anaemia	13.02	Define and classify anemia Enumerate and describe the investigation of anemia	Core	K	KH
		13.05E	Perform, Identify and describe the peripheral blood picture in anemia	Core	S	SH
		14.02	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	Core	K	KH
		15.03	Identify and describe the peripheral blood picture of macrocytic anemia	Core	S	SH
		16.01	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Core	K	KH
P13	Investigations in leukocytic disorder	18.01	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	Core	K	KH

Practical no	Practical	Competency no	Competancy	Core	Domain	Level
		18.02	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Core	K	KH
P14	Investigations in haemorrhagic disorder	20.01	Describe normal hemostasis. Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	Core	S	SH
P15	Blood Banking	21.01	Classify and describe blood group systems (ABO & RH)	Core	K	KH
		21.02	Enumerate blood components and describe their clinical uses	Core	S	SH
		21.03	Enumerate and describe infections transmitted by blood transfusion	Core	K	KH
		21.04	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	Core	K	KH
		21.05	Enumerate the indications and describe the principles and procedure of autologous transfusion	Core	K	KH
		21.06	Describe the correct technique to perform blood grouping. Describe the correct technique to perform a cross match	Core	S	SH
P16	Diseases of CVS	26.01	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	Core	K	KH
		26.01	Describe the etiology, pathophysiology, pathology features and complications of tumors of cardiovascular system.	Non core	K	KH
		26.02	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	Core	K	KH
		26.05	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	Core	K	KH
		26.07	Describe the etiology, pathophysiology, pathology, gross and microscopic	Core	K	KH

Practical no	Practical	Competency no	Competancy	Core	Domain	Level
			features, diagnosis and			
		26.08	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	Core	K	KH
		26.09	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	Core	K	KH
P17	Diseases of RS	25.01	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	Core	K	KH
		25.02	Describe the etiology, gross and microscopic appearance and complications of lung abscess	Core	K	KH
		25.03	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	Core	K	KH
		25.04	Define and describe the etiology, types, pathogenesis, stages, morphology, microscopic appearance and complications of tuberculosis	Core	K	KH
		25.05	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	Core	K	KH
		25.06	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 including mesothelioma	Core	K	KH
		25.07	Identify and describe the features of diseases and tumors of lung in a gross and microscopic specimen	Non core	K	KH
P18	Diseases of GIT	23.09	Describe and identify the microscopic features of peptic ulcer ,intestinal ulcers	Non core	K	KH

Practical no	Practical	Competency no	Competency	Core	Domain	Level
			and tumours of GIT			
P19	Diseases of hepatobiliary system	24.04	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	Core	K	KH
		24.05	Describe the etiology, pathogenesis and complications of portal hypertension	Core	K	KH
		24.09	Describe and identify the microscopic features of liver diseases and tumors	Core	K	KH
P20	Liver function Tests	24.01	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Core	K	KH
		24.02	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	Core	K	KH
		25.06	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver functions test.	Core	S	P
P21	Urine analysis	22.01	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	Core	S	SH
P22	Diseases of urinary system and renal function	27.01	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Core	K	KH
		27.01	Describe the normal histology of the kidney	Core	K	KH
		27.02	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure	Core	K	KH
		27.03	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	Core	K	KH

Practical no	Practical	Competency no	Competancy	Core	Domain	Level
		27.04	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	Core	K	KH
		27.05	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	Core	K	KH
		27.06	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	Core	K	KH
		27.07	Enumerate and describe the findings in glomerular manifestations of systemic disease	Core	K	KH
		27.08	Enumerate and classify diseases affecting the tubular Interstitium	Core	K	KH
		27.09	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	Core	K	KH
		27.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the Kidney	Core	K	KH
		27.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney	Core	K	KH
		27.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy	Core	K	KH
		27.17	Identify and describe the features of kidney diseases and tumors in a gross and microscopic specimen	Core	S	SH

Practical no	Practical	Competency no	Competancy	Core	Domain	Level
P23	CSF examination and diseases of nervous system	34.02	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumor	Core	K	KH
		34.03	Identify the etiology of Meningitis based on given CSF parameters	Core	S	P
P24	Diseases of Lymphnode and Spleen	19.01	Enumerate the causes and describe the differentiating features of lymphadenopathy	Core	S	SH
		19.04	Identify and describe the gross specimen of an enlarged spleen	Core	S	SH
P25	Diseases of Male Genital System	28.03	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	Core	K	KH
		28.05	Describe the etiology, pathogenesis, pathology and progression of prostatitis	Non core	S	SH
		28.06	Describe and identify the morphologic and microscopic features of diseases and tumors of male genital tract	Core	S	SH
P26	Diseases of Breast	30.01	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease.	Core	K	KH
		30.05	Describe and identify the morphologic and microscopic features of benign and malignant tumors of the breast	Core	S	SH
P27	Diseases of Female Genital Tract	29.01	Describe and identify the morphologic and microscopic features of diseases and tumors of female genital tract	Core	S	SH
		29.06	Describe the etiology and morphologic features of cervicitis	Non core	K	KH
		29.07	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Non core	K	KH
		29.08	Describe the etiology and morphologic features of adenomyosis	Non core	K	KH
		29.09	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Non core	K	KH

Practical no	Practical	Competency no	Competancy	Core	Domain	Level
P28	Diseases of Bone	32.01	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	Core	K	KH
		32.03	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	Core	K	KH
		32.07	Describe and identify the morphologic and microscopic features of diseases and tumors of bone	Core	S	SH
P29	Diseases of Skin	33.04	Identify, distinguish and describe common tumors of the skin	Non Core	S	SH
P30	Diseases of thyroid and Endocrine	31.01	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Core	K	KH
		31.01	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	Core	S	KH
		31.04	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features & complications of Thyroid tumors	Core	K	KH

b. Small Group Discussions/ Tutorials:

General Pathology	
1	Reversible Injury
2	Necrosis & Gangrene
3	Inflammation
4	Repair
5	Genetics
6	Edema, Shock, CPVC
7	Thrombosis, Embolism & Infarction
8	Definition, Nomenclature & differences between benign and malignant Neoplasia
9	Carcinogenesis & Spread of Neoplasia
10	Laboratory Diagnosis of Neoplasia

Haematology	
11	Iron Deficiency & Megaloblastic Anaemias
12	Other Anaemias
13	Leukaemias
14	Haemorrhagic Disorders
15	Blood Banking
Systemic Pathology	
16	Diseases of Cardio Vascular System
17	Diseases of Respiratory System
18	Diseases of GIT I
19	Diseases of GIT II
20	Diseases of Hepatobiliary System
21	Diseases of Urinary Tract
22	Diseases Central Nervous System
23	Diseases of Lymphnode and Spleen
24	Diseases of Male Genital Tract
25	Diseases of Female Genital Tract
26	Diseases of Breast
27	Diseases of Bone and Soft Tissue
28	Diseases of Endocrine
Clinical Pathology	
29	Diabetes Mellitus
30	Liver function Tests
31	Body Fluids
32	Semen Analysis.
Miscellaneous	
33	Tumour and tumour like conditions of infancy and childhood
34	Cellular aging and Apoptosis
35	Autoimmune Diseases
36	Infectious Diseases
37	Retinoblastoma (Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma -- Non core)
38	Quiz
39	Certifiable competencies
40	Certifiable competencies

❖ Competencies that require certification:

Sr.No.	Competency No	Competency
1	PA 13.4	Perform common haematological tests – Hb, RBC count, WBC count and DLC
2	PA 14.2	Identify and describe the peripheral smear in microcytic Anemia
3	PA 15.3	Identify and describe the peripheral blood picture of macrocytic Anemia
4	PA 16.2	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia

5	PA 21.6	Describe the correct technique to perform blood grouping Describe the correct technique to perform a cross match
6	PA 22.4	Describe and interpret the abnormalities in a panel containing liver function tests
7	PA 22.5	Describe and interpret the abnormalities in a panel containing, renal function tests
8	PA24.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver functions test.
9	PA35.3	Identify the etiology of Meningitis based on given CSF parameters.

AETCOM Competencies for Second MBBS Subject Competency: Pathology

Number	Competency
2.4	A. Demonstrate ability to work in a team of peers and superiors.
	B. Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers.
2,7	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures.

5. EVALUATION

A. UNIVERSITY EXAMINATION MARK DISTRIBUTION

Type of exam		Maximum marks	Minimum Marks
SUMMATIVE			
Theory (Two Papers)	Paper I	100	40
	Paper II	100	40
	Total	200	80
Practical		100	40
Total		300	150

B. Pattern Of Theory and Practical Examination In Final Examination Including Distribution Of Marks, Questions, And Time.

Question Paper Pattern

- **Two Theory Papers:**
- **Total duration: 3 hrs each**
- **(There will be 3 sections in each.)**

Paper I-

Section A: MCQ

General Pathology including General Neoplasia, Haematology including Transfusion medicine,

Section B:

General Pathology, General Neoplasia & ATECOM module 2.4A, 2.4B

Section C:

General Neoplasia, Haematology including Transfusion medicine

Section	Question No	Type	No of Questions	Marks
A	Question 1.	MCQ	10	20
B	Question 2	Long Answer Question	1	12
	Question 3	Short Notes (1 AETCOM)	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10
C	Question 5	Long Answer Question	1	12
	Question 6	Short notes	3/4	18
	Question 7	Short Answer Question	5 / 6	10

Paper II:**Section A:**

Systemic Pathology including Systemic Neoplasia, Clinical Pathology;

Section B:

Diseases of Cardio Vascular System, Diseases of Respiratory System, Central Nervous System, Diseases of Lymphnode and Spleen, Diseases of Bone and Soft Tissue, Diseases of Skin

Section C:

Diseases of GIT; Diseases of Hepatobiliary System; Diseases of Urinary Tract; Diseases of Male Genital Tract; Diseases of Female Genital Tract; Diseases of Breast; Diseases of Endocrine; ATECOM module 2.7

Section	Question No	Type	No of Questions	Marks
A	Question 1.	MCQ	10	20
B	Question 2	Long Answer Question	1	12
	Question 3	Short Notes	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10
C	Question 5	Long Answer Question	1	12
	Question 6	Short notes (1 AETCom)	3/4	18
	Question 7	Short Answer Question	5 / 6	10

PRACTICAL EXAMINATION:

1	OSPE/ Digital Spots/ charts	20 marks
2	CBC Report Interpretation and PS	15 marks
3	Blood Group	05 marks
4	Urine Interpretation	10 marks
5	2 Histopathological slides along with photograph	10 marks
6	Oral/ Viva	

	a. Gross Specimen-		20 marks
	b. Clinical Pathology & Haematology		20 marks
	Total Marks		100 marks

C. INTERNAL EXAMINATION :

Internal Assessment	Theory	100	40
	Practical	100	40
	Total	200	100

1. Internal Assessment Mark Distribution

Theory:

Examination Head		Examination Head		<i>Total</i>	Minimum marks for eligibility
Theory		Log Book			
Internal Examination I	50	AET com	5		
Internal Examination II	50	Home assignment	5		
Preliminary Examination	200	SDL	5		
Total No. of marks	300	Assignment of seminar	5		
		Attendance	5		
			25		
To be converted to	75		25	100	40

2. Internal Assessment Mark Distribution:

Practicals:

Examination Head		Examination Head		<i>Total</i>	Minimum marks for eligibility
Theory		Log Book			
Internal Examination I	50	Competencies	45		
Internal Examination II	50	Quiz	05		
Preliminary Examination	100	Continuous class test	15		
		Museum	05		
		Attendance	05		
		Journal	05		
Total No. of marks	200		80		
To be converted to	80		20	100	40

3. Theory Examination Pattern for Internal I & II

a. 50 marks each

Section	Question No	Type	No of Questions	Marks
A	Question 1.	MCQ	10	10
B	Question 2	Long Answer Question	1	12
	Question 3	Short Notes	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10

b. Practical Examination: 50 mark each.

4. Preliminary Examination : Mark Distribution

Pattern of theory examination in preliminary including distribution of marks, questions, and time

Question Paper Pattern

Two theory papers: 100 marks each

Total duration: 3 hrs each (There will be 3 sections in each.)

Paper I-

Section A: MCQ

General Pathology including General Neoplasia, Haematology including Transfusion medicine,

Section B:

General Pathology, General Neoplasia & ATECOM module 2.4A, 2.4B

Section C:

General Neoplasia, Haematology including Transfusion medicine

Section	Question No	Type	No of Questions	Marks
A	Question 1.	MCQ	10	20
B	Question 2	Long Answer Question	1	12
	Question 3	Short Notes (1 AETCOM)	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10
C	Question 5	Long Answer Question	1	12
	Question 6	Short notes	3/4	18
	Question 7	Short Answer Question	5 / 6	10

Paper II: Section A:

Systemic Pathology including Systemic Neoplasia, Clinical Pathology;

Section B:

Diseases of Cardio Vascular System, Diseases of Respiratory System, Central Nervous System, Diseases of Lymphnode and Spleen Diseases of Bone and Soft Tissue, Diseases of Skin

Section C:

Diseases of GIT; Diseases of Hepatobiliary System; Diseases of Urinary Tract; Diseases of Male Genital Tract; Diseases of Female Genital Tract; Diseases of Breast; Diseases of Endocrine; ATECOM module 2.7

Section	Question No	Type	No of Questions	Marks
A	Question 1.	MCQ	10	20
B	Question 2	Long Answer Question	1	12
	Question 3	Short Notes	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10
C	Question 5	Long Answer Question	1	12
	Question 6	Short notes (1 AETCOM)	3/4	18
	Question 7	Short Answer Question	5 / 6	10

PRACTICAL EXAMINATION:

1	OSPE/ Digital Spots/ charts	20 marks
2	CBC Report Interpretation and PBS	15 marks
3	Blood Group	05 marks
4	Urine Interpretation	10 marks
5	2 Histopathological slides along with photograph	10 marks
6	Oral/ Viva	
	Gross Specimen-	20 marks
	Clinical Pathology & Haematology	20 marks
	Total Marks	100 marks

F. PLAN FOR INTERNAL ASSESSMENT:

- There will be 3 internal formative assessment examinations of Theory and Practical in Pathology. Theory internal assessment exam marks will be out of 300. Practical internal assessment exam marks will be out of 200.
- The structure of the internal assessment of theory examinations will be similar to the structure of University Examinations.
- It is mandatory for the students to appear for all the internal assessment examinations.
- There will be only one additional examination for absent students (due to genuine reason) after approval by the Institutional Grievances Committee. It shall be taken after preliminary examination and before submission of internal assessment marks to the University.
- There will be Theory and Practical Internal Assessment of 100 marks each.
- Out of 100 marks of Theory Internal assessment:
 - 75 marks will be of internal formative assessment. (Converted from 300 marks)
 - 25 marks will be of Log book.: AET com 5; Home assignment 5; SDL 5; Assignment of seminar 5; Attendance 5
- Out of 100 marks of Practical Internal assessment:
 - 80 marks will be of internal formative assessment.
 - 20 marks will be of Log book:
 - Following activity will be converted to 20 marks

1. Competencies 45; Quiz 05; Continuous class test 15 Museum 05; Attendance 05; Journal 05
2. Total: 80

8. For appearing in final II year of Pathology, Student must get minimum of **100** marks of out of 200 marks of total internal assessment marks in theory and practical together (50% marks of the total marks). Student also must get minimum of **40** marks of out of 100 marks of total internal assessment marks in theory (40% marks in theory) and Student also must get minimum of **40** marks of out of 100 marks of total internal assessment marks in practical (40% marks in practical).
9. Internal Assessment marks will reflect as separate head of passing at the summative examination.
 - a. Internal assessment marks will not be added to marks of the University examinations and will be shown as separately in mark list.
10. Student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:
 - a. If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures.
 - b. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented.
 - c. For attendance, he will be allowed remedial measures **ONLY IF** attendance is more than 60% for each component.

6. Books Recommended:

1. Robbins, Cotran & Kumar Pathologic Basis Of Disease; Vinay Kumar, Abul K. Abbas, Jon C. Aster, Jayanta Debnath, Abhijit Das; 11th ed; 2025; Elsevier.
2. Robbins & Kumar Basic Pathology; Vinay Kumar, Abul K. Abbas, Jon C. Aster, Andrea T. Deyrup; 11th ed; 2023; Elsevier.
3. Robbins & Cotran Review of Pathology; Edward C. Klatt & Vinay Kumar; 5th ed; 2021; Elsevier
4. Textbook of Pathology; Harsh Mohan; 9th ed; 2023; Jaypee Brothers Medical Publishers Pvt. Ltd.
5. Pathology Quick Review; Harsh Mohan; 9th ed; 2023; Jaypee Brothers Medical Publishers.
6. Text and practical Haematology for MBBS; Tejinder Singh; 4th ed; 2021; (APC Books) Arya Publications.

Reference Books:

1. Rubin's Pathology: Mechanisms of Human Disease; David S. Strayer, Jeffrey E. Saffitz; Consulting editor Emanuel Rubin; 8th ed; 2019; Wolter Kluwer
2. Muir's Textbook of Pathology; C. Simon Herrington; 16th ed; 2020; CRC Press.
3. De Gruchy's Clinical Haematology in Medical Practice; Renu Saxena, Hara Prasad Pati, Manoranjan Mahapatra; 6th ed; 2012; Wiley Blackwell.
4. Oxford Textbook of Pathology (Vols I, Ila, I Ib); James O D. McGee, Peter G. Isaacson, Nicholas A. Wright: 1st ed; 1992; Oxford University Press
5. Boyd's Textbook of pathology; J.R. Bhardwaj, Prabal Deb, 11th ed; 2025; Wolters Kluwer.
6. Essentials of Clinical Pathology; Shirish M. Kawthalkar, 3rd ed; 2023; Jaypee Brothers Medical Publishers Pvt. Ltd.



Registrar

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