



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 August 2019, i.e. MBBS batch admitted for first year in 2019)

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 : 230 hours

Distribution of teaching hours

Method of Interaction		Teaching Hours	
Lectures			80
Small Group discussions			138
	Practical (27)	81	
	Small Group Discussions 20	20	
Integrated Teaching			37
Self-Directed Learning			12
Total			230

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 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		Integrated Teaching	Self-Directed learning
		Practical's	Tutorials		
General Pathology	31	07	09		
Haematology	14	07	00		
Systemic Pathology	35	11	01		
Clinical Pathology	00	04	10		
Total	80	26	20	40	12

4. SYLLABUS

- ❖ There are 36 topics and 182 outcomes. These outcomes are known as competencies.
- ❖ The Syllabus is dependent on Bloom's Taxonomy of Educational objectives and Millers 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. Amyloidosis
4. Inflammation
5. Healing and Repair
6. Haemodynamic disorder
7. Neoplastic disorders
8. Basic Diagnostic Cytology
9. Immunopathology and AIDS
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. Diseases of Lymphnode and Spleen
5. Haemorrhagic disorder
6. Blood Banking and Transfusion Medicine

3. Systemic Pathology and Clinical Pathology

1. Diseases of GIT
2. Diseases of Hepatobiliary System
3. Diseases of Respiratory System
4. Diseases of Cardio Vascular System
5. Diseases of Urinary Tract
6. Diseases of Male Genital Tract
7. Diseases of Female Genital Tract
8. Diseases of Breast
9. Diseases of Endocrine
10. Diseases of Bone and Soft Tissue
11. Diseases of Skin
12. Central Nervous System

1. Lectures:

Topic	Lecture No	Lecture	Competency No	Competency	Core	Domain	Level
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	Core	K	K
			1.3	Describe the history and evolution of Pathology	Non 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	K	KH
			2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	Core	K	KH
	L03	Reversible Injury	2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	Core	K	KH
	L04	Irreversible Injury I	2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	Core	K	KH
	L05	Irreversible Injury II	2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	Core	K	KH
	L06	Pathological Calcification	2.5	Describe and discuss pathologic calcifications, gangrene	Core	K	KH
	L07	Growth Disorder	2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	Core	K	KH

03.Amyloidosis	L08	Amyloidosis	3.1	Describe the pathogenesis and pathology of amyloidosis	Core	K	KH
04.Inflammation	L09	Acute inflammation I	4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	Core	K	KH
	L10	Acute Inflammation II	4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	Core	K	KH
	L11	Acute Inflammation III	4.2	Enumerate and describe the mediators of acute inflammation	Core	K	KH
	L12	Chronic Inflammation	4.3	Define and describe chronic inflammation including causes, types, non-specific and granulomatous; and enumerate examples of each	Core	K	KH
05. Healing and Repair	L13	Repair	5.1	Define and describe the process of repair and regeneration including wound healing and its types	Core	K	KH
06.Haemodynamic disorder	L14	Oedema	6.1	Define and describe edema, its types, pathogenesis and clinical correlations	Core	K	KH
	L15	Hyperaemia, Congestion and Shock	6.2	Define and describe hyperemia, congestion, hemorrhage	Core	K	KH
			6.3	Define and describe shock, its pathogenesis and its stages	Core	K	KH
	L16	Thrombosis	6.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	Core	K	KH
	L17	Embolism	6.5	Define and describe embolism and its	Core	K	KH

				causes and common types			
	L18	Infarction	6.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	Core	K	KH
07.Neoplastic disorders	L19	Neoplasia I	7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, Biologic, behaviour and spread. Differentiate between benign from malignant neoplasm	Core	K	KH
	L20	Neoplasia II	7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, Biologic, behaviour and spread. Differentiate between benign from malignant neoplasm	Core	K	KH
	L21	Carcinogenesis I	7.2	Describe the molecular basis of cancer	Core	K	KH
	L22	Carcinogenesis II	7.3	Enumerate carcinogens and describe the process of carcinogenesis	Core	K	KH
	L23	Carcinogenesis and Clinical Features	7.4	Describe the effects of tumor on the host including paraneoplastic syndrome	Core	K	KH
			7.5	Describe immunology and the immune response to cancer	Non core	K	KH
08.Basic Diagnostic Cytology	L24	Grading, Staging and Diagnosis of Neoplasia	7.6 E	Diagnosis of Neoplasia and Grading & Staging of the tumour			
			8.1	Describe the diagnostic role of cytology and its application in clinical care	Core	K	KH
			8.2	Describe the basis of exfoliative	Core	K	KH

				cytology including the technique & stains used			
09.Immunopathology and AIDS	L75	Immunity and Hypersensitivity	9.1	Describe the principles and mechanisms involved in immunity	Core	K	KH
			9.2	Describe the mechanism of hypersensitivity reaction	Core	K	KH
	L76	Immunity and Transplant rejection	9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	Core	K	KH
	L77	Autoimmunity and SLE	9.4	Define autoimmunity. Enumerate autoimmune disorders	Core	K	KH
			9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	Core	K	KH
			9.7	Define and describe the pathogenesis of other common autoimmune diseases	Non core	K	KH
	L78	AIDS	9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	Core	K	KH
10.Infections and Infestations	L71	Leprosy	10.3	Define and describe the pathogenesis and pathology of leprosy	Core	K	KH
11.Genetics and Paediatric Diseases	L79	Genetics	11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	Non core	K	KH
			11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	Non core	K	KH
12.Environment Pathology and Nutritional Diseases	L80	Environment Pathology and Nutrition deficiency or	12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	Core	K	KH

		excess					
			12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	Core	K	KH
			12.3	Describe the pathogenesis of obesity and its consequences	Core	K	KH
13.Introduction to Haematology and RBC abnormality	L25	Introduction to Haematology and Anaemia classification and investigations	13.1	Describe hematopoiesis and extramedullary hematopoiesis	Core	K	KH
			13.3	Define and classify anemia	Core	K	KH
			13.4	Enumerate and describe the investigation of anemia	Core	K	KH
14.RBC abnormality	L26	Iron Deficiency Anaemia	14.1	Describe iron metabolism	Core	K	KH
			14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	Core	K	KH
			14.3	Identify and describe the peripheral smear in microcytic anemia	Core	S	SH
	L27	Megaloblastic anaemia	15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	Core	K	KH
			15.2	Describe laboratory investigations of macrocytic anemia	Core	K	KH
			15.3	Identify and describe the peripheral blood picture of macrocytic anemia	Core	S	SH
			15.4	Enumerate the differences and describe	Non	K	KH

				the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	core		
	L28	Haemolytic anaemia I	16.1	Define and classify hemolytic anemia	Core	K	KH
			16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Core	K	KH
			16.5	Describe the peripheral blood picture in different hemolytic anaemias	Core	K	KH
	L29	Haemolytic anaemia II and Miscellaneous anaemias	16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	Core	K	KH
			17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	Non core	K	K
			17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	Non core	K	K
15.Leukocytic Disorder	L46	Leukocytic Disorder	18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	Core	K	KH
	L47	Leukaemias and Plasma cell Myeloma I	18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Core	K	KH
			20.1	Describe the features of plasma cell myeloma	Core	S	SH
	L48	Leukaemias and Plasma cell Myeloma	18.2	Describe the etiology, genetics, pathogenesis classification, features,	Core	K	KH

		II		hematologic features of acute and chronic leukemia			
16.Diseases of Lymphnode and Spleen	L49	Diseases of Lymphnode and Spleen I	19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	Core	K	KH
			19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	Core	K	KH
			19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	Core	K	KH
	L50	Diseases of Lymphnode and Spleen II	19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	Core	K	KH
			19.6	Enumerate and differentiate the causes of splenomegaly	Core	K	KH
17.Haemorrhagic disorder	L30	Haemorrhagic disorder I	21.1	Describe normal hemostasis	Core	K	KH
			21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	Core	S	KH
	L31	Haemorrhagic disorder II	21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	Core	K	KH
			21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated	Core	K	KH

				intravascular coagulation			
			21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	Core	K	KH
18.Blood Banking and Transfusion Medicine	L51	Blood Banking I	22.1	Classify and describe blood group systems (ABO and RH)	Core	K	KH
			22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	Core	S	SH
			22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	Core	K	KH
	L52	Blood Banking II	22.4	Enumerate blood components and describe their clinical uses	Core	K	KH
			22.5	Enumerate and describe infections transmitted by blood transfusion	Core	K	KH
			22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion	Core	K	KH
19.Diseases of GIT	L42	Diseases of GIT I	24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	Non core	K	KH
			24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	Core	K	KH
	L43	Diseases of GIT II	24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of	Core	K	KH

				the stomach			
	L44	Diseases of GIT III	24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	Core	K	KH
	L45	Diseases of GIT IV	24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	Core	K	KH
20.diseases of Hepatobiliary System	L53	Jaundice	25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Core	K	KH
	L54	Hepatitis	25.3	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	K	KH
	L55	Cirrhosis and alcoholic liver disease	25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	Core	K	KH
			25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	Core	K	KH
			25.5	Describe the etiology, pathogenesis and complications of portal hypertension	Core	K	KH
	L56	Tumours of Liver and Biliary tract	25.7 E	Tumours of Liver & Biliary Tract			

21.Diseases of Respiratory System	L38	Pneumonia and Lung abscess	26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	Core	K	KH
			26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	Core	K	KH
	L39	Chronic Airway disease and Bronchiectasis	26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	Core	K	KH
	L40	Tuberculosis and Occupational Lung Disease	26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	Core	K	KH
			26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	Core	K	KH
	L41	Tumours of Lung and Pleura	26.6	Define and describe the etiology, types, exposure, genetics environmental appearance,metastases and complications of tumors of the lung and pleura influence, pathogenesis, stages, morphology, microscopic	Core	K	KH
			26.7	Define and describe the etiology, types, exposure, genetics environmental	Non core	K	KH

				influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma			
22.Diseases of Cardio Vascular System	L32	Atherosclerosis	27.01	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	Core	K	KH
	L33	Aneurisms	27.02	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	Core	K	KH
	L34	Ischaemic heart Disease and Heart Failure	27.03	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	Core	K	KH
			27.05	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	Core	K	KH
	L35	Rheumatic Heart disease	27.04	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	Core	K	KH
	L36	Infective Endocarditis	27.06	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective Endocarditis	Core	K	KH
	L37	Pericarditis, Pericardial effusion, Cardiac function Test	27.07	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of	Core	K	KH

		and cardiomyopathy		Pericarditis and Pericardial effusion			
			27.08	Interpret abnormalities in cardiac function testing in acute coronary syndromes	Core	S	SH
			27.09	Classify and describe the etiology, types, pathophysiology, pathology, gross pericardial effusion and microscopic features, diagnosis and complications of cardiomyopathies	Core	K	KH
23.Diseases of Urinary Tract	L57	Disease of kidney 1	28.01	Describe the normal histology of the kidney	Core	K	K
			28.02	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
	L58	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	K	KH
	L59	Diseases of kidney 3	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	K	KH

			28.06	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	Core	K	KH
	L60	Diseases of kidney 4	28.03	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	Core	K	KH
			28.04	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	Core	K	KH
			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	K	KH
			28.07	Enumerate and describe the findings in glomerular manifestations of systemic disease	Core	K	KH
			28.09	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	Core	K	KH
	L61	Diseases of kidney 5	28.08	Enumerate and classify diseases affecting the tubular Interstitium	Core	K	KH

			28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Core	K	KH
	L62	Diseases of kidney 6	28.11	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
			28.12	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
			28.13	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
			28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	Non core	K	KH

	L63	Diseases of kidney 7	28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal Tumors	Core	K	KH
			28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	Non core	K	KH
24.Diseases of Male Genital Tract	L64	Diseases of Male Genital Tract	29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	Core	K	KH
			29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Core	K	KH
			29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	Core	K	KH
			29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Core	K	KH
			29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	Non core	K	KH

25.Diseases of Female Genital Tract	L66	Diseases of Cervix and Endometrium	30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the Cervix	Core	K	KH
			30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	Core	K	KH
			30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and Leiomyosarcomas	Core	K	KH
			30.6	Describe the etiology and morphologic features of cervicitis	Non core	K	KH
			30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Non core	K	KH
			30.8	Describe the etiology and morphologic features of adenomyosis	Non core	K	KH
			30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Non core	K	KH
	L67	Diseases of Ovary	30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	Core	K	KH
			30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational	Core	K	KH

				trophoblastic neoplasms.			
26.Diseases of Breast	L65	Diseases of Breast	31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease.	Core	K	KH
			31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	Core	K	KH
			31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	Non core	S	SH
			31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	Non core	K	KH
27.Diseases of Endocrine	L68	Diabetes Mellitus	32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	Core	K	KH
	L74	Diseases of Thyroid	32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Core	K	KH
			32.2	Describe the etiology, cause, iodine dependency, pathogenesis,	Core	K	KH

				manifestations, laboratory and imaging features and course of thyrotoxicosis			
			32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/hypothyroidism	Core	K	KH
28.Diseases of Bone and Soft Tissue	L69	Diseases of Bone	33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	Core	K	KH
			33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Core	K	KH
			33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	Non core	K	KH
	L70	Soft Tissue tumour and Rheumatoid Arthritis	33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	Core	K	KH
			33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria	Non core	K	KH

				and complications of rheumatoid arthritis			
29.Diseases of Skin	L72	Diseases of Skin	34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin.	Core	K	KH
			34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	Core	K	KH
			34.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	Non core	K	KH
30. Central Nervous System	L73	CNS tumours	35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of CNS Tumors	Core	K	KH

2. Small Group discussions:

- a. Practicals
- b. Tutorials

a. Practical's:

Practical no	Practical	Competancy no	Competancy	Core	Domain	Level
P01	Histotechniques I	01.4 E	Histotechniques I			
P02	Histotechniques II	01.5 E	histotechnique II			
P03	Cell Injury	02.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	Core	S	SH
P04	Inflammation	04.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	Core	S	SH
P05	Circulatory Disturbances	06.7	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	Core	S	SH
P06	Neoplasia I	07.6E	Diagnosis of Neoplasia and Grading & Staging of the tumour			
P07	Neoplasia II	07.6E	Diagnosis of Neoplasia and Grading & Staging of the tumour			
		08.3	Observe a diagnostic cytology and its staining and interpret the specimen	Core	S	KH
P08	Anticoagulants and Routine Haematological Tests I	13.2	Describe the role of anticoagulants in hematology	Core	K	KH
		13.6E	Routine Haematological Tests I			
P09	Routine Haematological Tests II	13.7E	Routine Haematological Tests II			

P10	Investigations in anaemia	13.4	Enumerate and describe the investigation of anemia	Core	K	KH
		13.5	Perform, Identify and describe the peripheral blood picture in anemia	Core	S	SH
		14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	Core	K	KH
		14.3	Identify and describe the peripheral smear in microcytic anemia	Core	S	SH
		15.2	Describe laboratory investigations of macrocytic anemia	Core	K	KH
		15.3	Identify and describe the peripheral blood picture of macrocytic anemia	Core	S	SH
		15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	Non core	K	KH
		16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Core	K	KH
		16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	Core	K	KH
		16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	Core	K	KH
		16.5	Describe the peripheral blood picture in different hemolytic anaemias	Core	K	KH
		16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it	Core	S	P
P11	Investigations in haemorrhagic disorder	21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	Core	S	SH
P12	Diseases of CVS	27.01	Distinguish arteriosclerosis from atherosclerosis.	Core	K	KH

			Describe the pathogenesis and pathology of various causes and types of arteriosclerosis			
		27.02	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	Core	K	KH
		27.04	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	Core	K	KH
		27.05	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	Non core	S	SH
		27.06	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective Endocarditis	Core	K	KH
		27.07	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	Core	K	KH
		27.08	Interpret abnormalities in cardiac function testing in acute coronary syndromes	Core	K	KH
		27.09	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	Core	K	KH
		27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	Core	K	KH
P13	Diseases of RS	26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	Core	K	KH

		26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	Core	K	KH
		26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	Core	K	KH
		26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	Core	K	KH
		26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	Core	K	KH
		26.6	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	Core	K	KH
		26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	Non core	K	KH
P14	Diseases of GIT	24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	Non core	K	KH
		24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	Core	K	KH
		24.3	Describe and identify the microscopic features of peptic ulcer	Core	S	SH
		24.4	Describe and etiology and pathogenesis and pathologic	Core	K	KH

			features of carcinoma of the stomach			
		24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	Non core	K	KH
P15	Investigations in leukocytic disorder	18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	Core	K	KH
		18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Core	K	KH
P16	Diseases of Lymphnode and Spleen	19.3	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	Core	S	SH
		19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	Core	K	KH
		19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	Core	S	SH
		19.7	Identify and describe the gross specimen of an enlarged spleen	Core	S	SH
		20.1	Describe the features of plasma cell myeloma	Core	S	SH
P17	Blood Banking	16.7	Discribe the correct technique to perform a cross match	Core	S	SH
		22.1	Classify and describe blood group systems (ABO & RH)	Core	K	KH
		22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	Core	S	SH
		22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	Core	K	KH
P18	Diseases of hepatobiliary system and liver fuction test	25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jauncice, distinguish between direct and indirect hyperbilirubinemia	Core	K	KH

		25.3	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	K	KH
		25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	Core	K	KH
		25.5	Describe the etiology, pathogenesis and complications of portal hypertension	Core	K	KH
		25.6	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
P19	Urine analysis	23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	Core	S	SH
P20	Diseases of urinary system and renal function test	28.01	Describe the normal histology of the kidney	Core	K	KH
		28.02	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
		28.03	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	Core	K	KH
		28.04	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings	Core	K	KH

			progression and complications of chronic renal failure			
		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	K	KH
		28.06	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	Core	K	KH
		28.07	Enumerate and describe the findings in glomerular manifestations of systemic disease	Core	K	KH
		28.08	Enumerate and classify diseases affecting the tubular Interstitium	Core	K	KH
		28.09	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	Core	K	KH
		28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	Core	K	KH
		28.11	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
		28.12	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

		28.13	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
		28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal Tumors	Core	K	KH
		28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	Core	K	KH
P21	Diseases of Male Genital System	29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	Core	K	KH
		29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Core	K	KH
		29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	Core	K	KH
		29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Core	K	KH
		29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	Non core	S	SH
P22	Diseases of Breast	31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast	Core	K	KH

			disease.			
		31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	Core	K	KH
		31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	Non core	S	SH
		31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	Non core	K	KH
P23	Diseases of Female Genital Tract	30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the Cervix	Core	K	KH
		30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	Core	K	KH
		30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and Leiomyosarcomas	Core	K	KH
		30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	Core	K	KH
		30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms.	Core	K	KH
		30.6	Describe the etiology and morphologic features of cervicitis	Non core	K	KH
		30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Non core	K	KH
		30.8	Describe the etiology and morphologic features of	Non	K	KH

			adenomyosis	core		
		30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Non core	K	KH
P24	Diseases of Bone	33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	Core	K	KH
		33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Core	K	KH
P25	Diseases of Skin	34.4	Identify, distinguish and describe common tumors of the skin	Core	K	KH
P26	CSF examination and diseases fo nervous system	35.1	Describe the etiology, types and pathogenesis differentiating factors, CSF finding in meningitis	Core	K	KH
		35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumor	Core	K	KH
		35.3	Identify the etiology of Meningitis based on given CSF parameters	Core	S	P
P27	Diseases of thyroid and Endocrine	32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Core	K	KH
		32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	Core	K	KH
		32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	Core	K	KH

b. Tutorials:

Tutorial No	Small group discussion	Competency no	Competency	Core	Domain	Level
T01	Cellular aging and Apoptosis	02.7	Describe and discuss the mechanisms of cellular aging and apoptosis	Noncore	K	KH
T02	Amyloidosis	03.2	Identify and describe amyloidosis in a pathology specimen	Noncore	S	SH
T03	Repair	05.1	Define and describe the process of repair and regeneration including wound healing and its types	Core	K	KH
T04	Thrombosis	06.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	Core	K	KH
T05	Molecular basis of Cancer	07.2	Describe the molecular basis of cancer	Core	K	KH
T06	Carcinogenesis	07.3	Enumerate carcinogens and describe the process of carcinogenesis	Core	K	KH
		07.5	Describe immunology and the immune response to cancer	Noncore	K	KH
T07	Tumour and tumour like conditions of infancy and childhood	11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	Noncore	K	KH
		11.2	Describe the pathogenesis and pathology of tumor and tumour- like conditions in infancy and childhood	Noncore	K	KH
T08	IHD	27.05	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic Heart disease	Core	K	KH

T09	Pericarditis and myocardial pathology	27.09	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	Noncore	K	KH
		27.07	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	Core	K	KH
T10	Autoimmune Diseases	09.7	Define and describe the pathogenesis of other common autoimmune diseases	Noncore	K	KH
T11	Infectious Diseases	10.2	Define and describe the pathogenesis and pathology of cysticercosis	Core	K	KH
		10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and Helminthic diseases	Noncore	K	KH
		10.1	Define and describe the pathogenesis and pathology of malaria	Core	K	KH
T12	Body Fluid Examination	23.2	Describe abnormal findings in body fluids in various disease states	Core	K	KH
T13	Semen Analysis	23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	Core	S	SH
T14	Renal Function Test	23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	Core	S	SH
T15	Liver Function tests	25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Core	K	KH

		25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests.	Core	K	KH
		23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	Core	S	SH
T16	DM	32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	Core	K	KH
T17	Hyper Parathyroidism and Pancreatic Cancer	32.5	Describe the etiology, genetics, pathogenesis, manifestations laboratory and morphologic features of hyperparathyroidism	Noncore	K	KH
		32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	Noncore	K	KH
T18	CSF Examination	35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	Core	K	KH
		35.3	Identify the etiology of meningitis based on given CSF Parameters	Core	S	P
T19	Adrenal diseases	32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	Noncore	K	KH
		32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	Noncore	K	KH
		32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic	Noncore	K	KH

			features of adrenal neoplasms			
T20	Retinoblastoma	36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	Noncore	K	KH

❖ **Competencies that require certification:**

Sr. No.	Competency No	Competency
1	PA16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it
2	PA25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non obstructive jaundice based on clinical features and liver functions test.
3	PA35.3	Identify the etiology of Meningitis based on given CSF parameters.

5. EVALUATION

A. UNIVERSITY EXAMINATION & PRELIMINARY EXAMINATION MARK DISTRIBUTION

Type of exam		Maximum marks	Minimum Marks
SUMMATIVE			
Theory (Two Papers)	Paper I	100	40
	Paper II	100	40
	Total	200	100
Practicals		100	50
Total		300	150

B. PATTERN OF THEORY EXAMINATION IN FINAL EXAMINATION INCLUDING DISTRIBUTION OF MARKS, QUESTIONS, AND TIME.

- i. Two theory papers : 100 marks each
- ii Total duration : 3 hrs each (There will be 2 sections in each.)
- iii Paper I : General Pathology including General Neoplasia, Haematology including Transfusion medicine
- iv Paper II : Systemic Pathology including Systemic Neoplasia, Clinical Pathology. Additionally ATECOM module 2.2 & 2.8

C. QUESTION PAPER PATTERN

Paper I- General Pathology including 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	3 / 4	18
	Question 4	Short Answer Question	5 / 6	10
C	Question 5	Long Answer Question	1	12
	Question 6	Short notes	2 / 3	18
	Question 7	Short Answer Question	5 / 6	10

Paper II- Systemic Pathology including Systemic Neoplasia, Clinical Pathology. Additionally ATECOM module 2.2 & 2.8

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	2 / 3	12
	Question 7	Short Answer Question	5 / 6	10
	Question 8	Short notes (ATECOM MODULE)	1	6

D. 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	:	40 marks
	a. Gross Specimen- 20 marks		
	b. Clinical Pathology & Haematology - 20 marks		
Total Marks			100 marks

E. INTERNAL EXAMINATION I and II

1. Theory and Practical including Viva Mark Distribution

Internal Assessment	Theory	40	16
	Practical	40	16
	Log Book	20	08
	Total	100	50

2. Theory Examination Pattern

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

3. Practical Examination:For Ist and IInd term examinations: 50 marks each**Log Book:**

Sr. No	Head of activity	Marks
1	Day to day assessment	7
2.	Journal completion	3
3	Reflection on ATECOM module 2.2 and 2.8	4
4	Activities like seminar, symposia, quizzes and other academic activities	3
5	Achievement of certifiable competencies.	3
Total		20

Mark distribution for Theory and Practical Exam

Exam	Examination Head			Total
	Theory	Practical	Log Book	
Internal Examination I	50	50		
Internal Examination II	50	50		
Preliminary Examination	200	100		
Total No. of marks	300	200		
To be converted to	40	40	20	100
Minimum marks for eligibility	16	16	08	50

F. PLAN FOR INTERNAL ASSESSMENT:

- There will be 3 internal assessment examinations in Pathology. The structure of the internal assessment 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.
- Internal assessment marks for theory will be out of 300 and practical will be out of 200.
- Total theory internal assessment will be reduced to 40 marks and total practical internal assessment will be reduced to 40 marks.
- Log Book will have 20 marks. It will include day to day assessment, Journal completion, Reflection on ATECOM module 2.2 and 2.8, all activities like seminar, symposia, quizzes and other academic activities and Achievement of certifiable competencies.

7. Students must secure at least 50% marks of the total marks 100 of internal assessment **(combined in theory, practical and Log Book; not less than 40 % marks in theory, practical or Log Book)** to be eligible for appearing University examination
8. Internal assessment marks will reflect as separate head of passing at the summative examination.
9. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.
10. If any candidate fails in internal assessment, his / her result will be withheld by university and one theory and one Practical exam will be conducted within 60 days of result as internal exam.

6. BOOKS RECOMMENDED:

1. Pathologic basis of diseases by Robbins; By- Kumar.V, Abbas.A, Fausto.N ; 10th Edition,2004,
2. Basic Pathology by Robbins ; By- Kumar.V,Cortan.R,Robbins.S.L; 10th Edition;
3. Text book of Pathology by Harsh Mohan ; By- Harshmohan; 7th Edition,Jaypee Brothers, New Delhi.
4. Text book of General Pathology Part I & II by Bhende and Deodhare; Part I & Part II, By- Deodhare.S.G, Deodhare S.S, 6th Edition, 2002, Popular Prakashan Private Limited.

Reference books:

1. Anderson's text book of Pathology Vol I & II.; By- James.L, Damjonov.I, 10th Edition,1990,Mosby.
2. Oxford text book of Pathology Vol. I, II & III
3. Pathology by Rubin and Farber,By- Rubin.E, Gorstein.F, Rubin.R, Schwarting. R,Strayer.D, 4th Edition,2005,Lippincott and Williams and Wilkins.
4. Clinical Pathology by Talib
5. Text book of Pathology by Muir; By- MacSween.R.N.M,Whaley.K, 13th Edition,1992,ELBS- Publishers Great Britain
6. Haematology by De Gruchi; By- Firkin.F,Chesterman.C,Penington.D,Rush.B, 5th Edition,1989, Blackwell Science.



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