MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)
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COMPETENCY BASED MEDICAL EDUCATION

(CBME)

(with effect from 2023-2024 Admission Batch)

Curriculum for

Second M.B.B.S

Pathology

Amended upto AC-52/2025, Dated 28/11/2025

Amended History

1. Approved as per BOM 57/2019, Dated 26/04/2019.

2. Amended upto AC-41/2022, [Resolution No. 4.16], [Resolution No. 4.17.i and 4.17.ii], Dated 27/08/2021.

3. Amended upto AC-44/2022, [Resolution No. 5.18] Dated 09/12/2022.

4. Amended as per Resolution No. 5.12 of AC-48/2023, dated 12/12/2023.

5. Amended as per AC-49/2024, [Resolution No. 4.9 (40A, 40B & 40C)], Dated 25/04/2024. (For Admission Batch 2023).

6. Amended upto AC-51/2025, [Resolution No. 4.18, (Annexure-40A, 40B)], [Resolution 19 (Annexure-41)], [Resolution No. 4.20, (Annexure-42)]; [Resolution No. 4.21, (Annexure-43A)]; [Resolution No. 4.22, (Annexure-44A)]; Dated 29/04/2025. (For admission batch 2024).

7. Amended as per AC-52/2025, [Resolution No. 6.7, (Annexure-39A)]; Dated 28/11/2025. (For admission batch 2024 onwards)

PATHOLOGY (CODE: PA)

Resolution No. 4.22 of Academic Council (AC-51/2025):

Resolved to adopt the NMC new competencies for UG MBBS Pathology, Pharmacology, Microbiology and FMT (teaching hours in 2nd & 3rd year) Admission batch 2024 [ANNEXURE-44A, 44B, 44C, 44D1 & 44D2].

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Resolution No. 4.18 of Academic Council (AC-51/2025): Resolved to adopt the changes in University theory paper pattern as per new NMC guidelines for UG MBBS admission batch 2024 (inclusion of Clinical Scenario Based MCQs, questions on integrated syllabus, change of marks distributions) for Pathology, Microbiology Pharmacology and FMT [ANNEXURE-40A, 40B, 40C, 40D, 40E & 40F].

Mahatma Gandhi Mission Medical College (Kamothe, Sambhaji Nagar, Sanpada, Nerul)

Department of Pathology, Microbiology and Pharmacology

Annexure-40A of AC-51/2025

Revised Assessment Pattern (Admission Batch 2024)

Preliminary & University Exam Pattern

Applicable from Admission Batch 2024

Each subject– 2 papers (I / II) – 100 X 2 = **Total 200 Marks**

Theory Paper Pattern and Marks Distribution: (3hrs)

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 1	Section A	Q1. Clinical Scenario Based MCQs 10	10 x 2Mks each= 20Mks	20
	Section B	Q2.BAQs (5/6)	5 x3 Mks each = 15 Mks	15
		Q3. SAQs (3/4) • One question from AETCOM to be asked	3 x 5 Mks each = 15 Mks	15
		Q4 Structured LAQs (1/2)	1 x 10Mks each=10Mks	10
	Section C	Q5. BAQs (5/6) Q6.SAQs (3/4) Q7. Structured LAQs (1/2)	5 x3 Mks each = 15 Mks 3 x 5 Mks each = 15 Mks 1 x 10Mks each=10Mks	15 15 10
TOTAL				**100**

***Questions from Horizontal/ Vertical integration to be asked in the form of two SAQs or one LAQ in Section C**

***Questions of reasoning type should also be included**

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 2	Section A	Q1.Clinical Scenario Based MCQs 10	10 x 2 Mks each= 20Mks	20
	Section B	Q2.BAQs (5/6) Q3. SAQs (3/4) • One question from AETCOM to be asked Q4 Structured LAQs (1/2)	5 x3 Mks each = 15 Mks 3 x 5 Mks each = 15 Mks 1 x 10Mks each=10Mks	15 15 10
	Section C	Q5. BAQs (5/6) Q6.SAQs (3/4) Q7. Structured LAQs (1/2)	5 x3 Mks each = 15 Mks 3 x 5 Mks each = 15 Mks 1 x 10Mks each=10Mks	15 15 10
	TOTAL			**100**

***Questions from Horizontal/ Vertical integration to be asked in the form of two SAQs or one LAQ in Section C**
***Questions of reasoning type should also be included**

BOS Pathology March 2025
Mahatma Gandhi Mission Medical College

(Kamothe, Sambhaji Nagar, Sanpada, Nerul)
Department of Pathology
Revised Assessment Pattern (MBBS Admission Batch 2024)

Sr. No.	Exam	Theory	Practical
1.	1st Internal assessment examination	100	100
2.	2nd Internal assessment examination	100	100
2.	Preliminary examination	200	100
Total		**400**	**300**

- Preliminary examination pattern will be as per University examination
- Respective colleges/ Departments will conduct internal assessment examinations and maintain records of the same.

PRELIMINARY & UNIVERSITY EXAM PATTERN (PATHOLOGY)

Applicable from MBBS Admission Batch 2024

Each subject– 2 papers (I / II) – 100 X 2 = **Total 200 Marks**

Portion:

Paper 1	General Pathology inclusive of general Neoplasia, Hematology inclusive of transfusion medicine. AETCOM module 2.4
Paper 2	Systemic Pathology inclusive of Systemic Neoplasia and Clinical Pathology. AETCOM module 2.7

Theory Paper Pattern and Marks Distribution: (3hrs)

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 1	Section A	Q1. Clinical Scenario Based MCQs 10	10 x 2 = 20Marks	20
	Section B	Q2.BAQs (5/6) Q3. SAQs (3/4) • One question from AETCOM to be asked Q4 Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	Section C	Q5. BAQs (5/6) Q6.SAQs (3/4) Q7. Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
			TOTAL	**100**

***Questions from Horizontal/ Vertical integration to be asked either in the form of two SAQs or one LAQ in Section C.**

***Questions of the reasoning type should also be included.**

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 2	Section A	Q1. Clinical Scenario Based MCQs 10	10 x 2 = 20Marks	20
	Section B	Q2. BAQs (5/6) Q3. SAQs (3/4) • One question from AETCOM to be asked Q4 Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	Section C	Q5. BAQs (5/6) Q6. SAQs (3/4) Q7. Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	TOTAL			**100**

***Questions from Horizontal/ Vertical integration to be asked either in the form of two SAQs or one LAQ in Section C.**

***Questions of the reasoning type should also be included.**

PRACTICALS PATTERN AND MARKS DISTRIBUTION:

OSPE 20	OSPE 20
Urine (Reagent strip method)	10
Peripheral Smear (PS) with differential leucocyte count (DLC)	10
Blood Group	10
Histopathology slide	08
Interpretation of charts and Lab reports	12
Viva 1(Clinical Pathology)	15
Viva 2 (Systemic Pathology)	15
TOTAL	**100 Marks**

OSPE

- Time: 10 minutes (5+5)
- No of stations: 2 stations
- Level of assessment: Psychomotor / cognitive / Soft skill
- Marks: 10 marks each (Total 20)
- Individual check list to be prepared for each station.

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

INTERNAL EXAMS

There will be 2 Internal Exams besides prelims
There will be only one theory paper for both Internal Exams.
Prelims will be exactly like University exam
1st Internal Exam: (Theory 100 Marks, Practicals 100Marks)
2nd Internal Exam: (Theory 100 Marks, Practicals 100Marks)

Portion for Internal Exams:

1st Internal Exam: General Pathology inclusive of general Neoplasia, Hematology inclusive of transfusion medicine. AETCOM module 2.4

2nd Internal Exam: Systemic Pathology inclusive of Systemic Neoplasia and Clinical Pathology. AETCOM module 2.7

Prelims:

Paper 1	General Pathology inclusive of general Neoplasia, Hematology inclusive of transfusion medicine. AETCOM module 2.4
Paper 2	Systemic Pathology inclusive of Systemic Neoplasia and Clinical Pathology. AETCOM module 2.7

1St and 2nd Internal Exams: (Time 3hrs)

Theory Paper Pattern and Marks Distribution:

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 1	Section A	Q1. Clinical Scenario Based MCQs 10	10 x 2 = 20Marks	20
	Section B	Q2.BAQs (5/6) Q3. SAQs (3/4) • One question from AETCOM to be asked Q4 Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	Section C	Q5. BAQs (5/6) Q6.SAQs (3/4) Q7. Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
			TOTAL	**100**

***Questions from Horizontal/ Vertical integration to be asked either in the form of two SAQs or one LAQ in Section C.**

***Questions of the reasoning type should also be included.**

Paper	Section	Type and Number of Questions	Marks Allotted	Total Marks
Paper 2	Section A	Q1. Clinical Scenario Based MCQs 10	10 x 2 = 20Marks	20
	Section B	Q2. BAQs (5/6) Q3. SAQs (3/4) • One question from AETCOM to be asked Q4 Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	Section C	Q5. BAQs (5/6) Q6. SAQs (3/4) Q7. Structured LAQs (1/2)	5 x 3 = 15 Marks 3 x 5 = 15 Marks 1 x 10 = 10 Marks	15 15 10
	TOTAL			**100**

***Questions from Horizontal/ Vertical integration to be asked either in the form of two SAQs or one LAQ in Section C.**

***Questions of the reasoning type should also be included.**

PRACTICALS PATTERN AND MARKS DISTRIBUTION:

OSPE 20	OSPE 20
Urine (Reagent strip method)	10
Peripheral Smear (PS) with differential leucocyte count (DLC)	10
Blood Group	10
Histopathology slide	08
Interpretation of charts and Lab reports	12
Viva 1(Clinical Pathology)	15
Viva 2 (Systemic Pathology)	15
TOTAL	**100 Marks**

OSPE

- Time: 10 minutes (5+5)
- No of stations: 2 stations
- Level of assessment: Psychomotor / cognitive / Soft skill
- Marks: 10 marks each (Total 20)
- Individual check list to be prepared for each station.

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

Resolution No. 6.7 of Academic Council (AC-52/2025):
Resolved to approve proposed blue printing SOP (replacing the existing blueprint) for Pathology, Microbiology and Pharmacology subject in 2nd MBBS CBME for theory and practical from admission batch 2024 onwards **[ANNEXURE-39A, 39B & 39C]**.

Annexure -39A of AC-52/2025

BLUE PRINTING FOR THEORY PAPER:

Blueprint of Pathology Paper – I

Competencies/ Group of competencies in basic sciences	Core (Y/N)	Weight-age (%)	Your Total Marks (BP)
1. Cell injury and adaptation; Amyloidosis	Y	11.76	16
2. Inflammation, healing and repair; Hemodynamic disorders	Y	13.24	18
3. Neoplasia; Immunopathology	Y	13.24	18
4. Basic diagnostic cytology	Y	5.88	8
5. Infections and infestations	N	5.88	8
6. Genetic and pediatric diseases	N	5.15	7
7. Environmental and nutritional disease	N	5.88	8
8. Introduction to hematology; all anemia	Y	16.18	22
9. Leukocytic disorders, lymph node and spleen; plasma cell disorders; Hemorrhagic disorders	Y	11.03	15
10. Blood banking and transfusion	Y	8.09	11
11. AETCOM	Y	3.67	5
		100%	*TOTAL-136*

	TOTAL	WITH OPTIONS
MCQ-2	20	20
LAQ-10	20	40
SAQ-5	30	40
BAQ-3	30	36
	100	**136**

	NO	WITH OPTIONS
MCQ-2	10	10
LAQ-10	2	4
SAQ-5	6	8
BAQ-3	10	12

Blueprint of Pathology Paper – II

Competencies/ Group of competencies in basic sciences	Core (Y/N)	Weight-age (%)	Your Total Marks (BP)
1. Clinical Pathology	Y	11.76	16
2. Gastrointestinal tract; Hepatobiliary system	Y	18.38	25
3. Respiratory system; Cardiovascular	Y	16.18	22
4. Urinary tract; Male genital system	Y	12.5	17
5. Female genital tract; Breast	Y	12.5	17
6. Endocrine system	Y	9.56	13
7. Bone and soft tissues; Skin	Y	8.09	11
8. Central Nervous System, Eye	Y	7.35	10
9. AETCOM	Y	3.68	5
		100%	*TOTAL-136*

- **A GOOD COM BINATION OF RECALL COMPREHENSION AND ANALYTICAL QUESTION SHOULD BE INCLUDED (CAN BE INDICATED WHEREVER FELT NECESSARY).**

BLUE PRINTING FOR PRACTICALS PATTERN AND MARKS DISTRIBUTION:

OSPE 20	OSPE 20
Urine (Reagent strip method)	10
Peripheral Smear (PS) with differential leucocyte count (DLC)	10
Blood Group	10
Histopathology slide	08
Interpretation of charts and Lab reports	12
Viva 1(Clinical Pathology)	15
Viva 2 (Systemic Pathology)	15
TOTAL	**100 Marks**

OSPE

- Time: 10 minutes (5+5)
- No of stations: 2 stations
- Level of assessment: Psychomotor / cognitive / Soft skill
- Marks: 10 marks each (Total 20)
- Individual check list to be prepared for each station.

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

INTERNAL ASSESSMENT CALCULATION (PATHOLOGY)

Sr. No.	Criteria	Theory	Practical
1.	*All internal assessment examinations including preliminary examination	80	60
2.	Day to Day assessment		
	➢ Day to Day assessment (PBL/ One line questions/ MCQ)	20	-
	➢ Day to Day assessment (Viva/ Seminars/ OSPE/ SDL)	-	20
3.	Logbook + Journals (Journal + AETCOM logbook)	-	20
Total		**100**	**100**

Total Marks on Final Marksheet for the subject of Pathology will be

Theory	200 Marks
Practical	100 Marks
IA	200Marks
TOTAL	**500Marks**

***

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

3) Electives

Objectives: To provide the learner with opportunities:

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

4) Attitude, Ethics and Communication Module (AETCOM)

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

Resolution No. 4.21 of Academic Council (AC-51/2025):

Resolved to approve list of integrated topics from each subject (UG MBBS Pathology, Pharmacology Microbiology and FMT) Admission batch 2024. It was further resolved that these integrated topics need to be displayed on website and distributed to the students as they are part of theory and practical assessment.
[ANNEXURE-43A, 43B, 43C, 43D & 43 E].

Annexure-43A of AC-51/2025

Appendix 1

Examples of aligned and integrated topics (indicative)

Anemia
Jaundice
Diabetes
Thyroid Diseases
Nutrition
Febrile Illness
Tuberculosis
Malaria
Diarrhoea
Ischemic Heart Disease
Polycystic Ovarian Syndrome

Resolution No.3.1.2.3 of BOM-59/2019: The updated list of Text books and Reference books for 2nd MBBS (Microbiology, Pharmacology, Pathology, FMT) are approved. **[Annexure-8]**

(To be merged with syllabus i.e. Annexure-69 of BOM-57/2019 dt.26/04/2019)

Recommended books

Text Books

Sr. No.	Author	Title
1.	Robbins and Cotran	Pathologic basis of Disease
2.	Editors: Saxena Renu, Hara Prasad Pati, Mahapatra M.	De Gruchy's Clinical Haematology in Medical practice
3.	Harsh Mohan	Textbook of Pathology
4.	Harsh Mohan	Practical Pathology Book
5.	Dr. Vinay Kamal	Textbook of Pathology
6.	Dr. A.K. Mandal, Dr. Shramana Choudhury	Textbook of Pathology for MBBS (Volumes I and II)
7.	Sabitri Sanyal	Clinical Pathology: A Practical Manual Book
8.	Shirish M Kawthalkar	Essentials of Haematology
9.	Shirish M Kawthalkar	Essentials of clinical Pathology

Reference Books

Sr. No.	Author	Title
1.	Barbara Bain Imelda Bates Mike Laffan	Dacie and Lewis Practical hematology
2.	Fiona Roberts Elaine MacDuff	Pathology illustrated
3.	McPherson MD MSc, Richard A., Pincus, Matthew R.	Henry's Clinical Diagnosis and Management by Laboratory Methods
4.	R K Saran.	Transfusion medicine: technical manual
5.	Kalidas D. Chavan, Rajendra S. Bangal	Informed Consent In Medical Practice Principles And Conventions
6.	Ramdas Nayak	Exam Preparatory Manual for undergraduates

4. Approved the changes in CBME Second professional teaching hours in Phase II MBBS 2022-23 (late admission batch 2022) as per Resolution No. 5.12 of AC-48/2023, dated 12/12/2023 [ANNEXURE-21-A, 21-H & 21-C].

Resolution No. 4.9 of Academic Council (AC-49/2024): Resolved to approve the changes in the CBME second professional teaching hours, Phase-II MBBS 2022-23 (late admission batch 2022) [ANNEXURE- 40A, 40B & 40C].

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राष्ट्रीय आयुर्विज्ञान आयोग
National Medical Commission
(Undergraduate Medical Education Board)

No. U.14021/8/2023-UGMEB **Dated, the 01st August, 2023**

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

Under Graduate Medical Education Board invited comments on draft Competency Based Medical Education Guidelines vide Public Notice of even no. dated 23/06/2023.

2. After consideration of comments received, in exercise of powers conferred by the National Medical Commission Act, 2019 and particularly by sections 10, 24, 25, and 57 of the said Act, Under Graduate Medical Education Board publishes the Competency Based Medical Education Guidelines.

3. Guidelines shall be effective from the date of its publication i.e.; 01/08/2023.

01/08/2023
(Shambhu Sharan Kumar)
Director, UGMEB

2nd Professional Year:

4. PATHOLOGY

a. Competencies:

The undergraduate must demonstrate:

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

b. Broad subject specific objectives

Knowledge:

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

- Describe the structure and ultra structure of a sick cell, causes and mechanisms of cell Injury, cell death and repair.
- Correlate structural and functional alterations in the sick cell.
- Explain the path physiological processes, which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestation associated with it.
- Describe the mechanisms and patterns of tissue response to injury so as to appreciate the path physiology of disease processes and their application to clinical science.
- Correlate the gross and microscopic alterations of different organ systems in common disease to the extent needed for understanding disease processes and their clinical significance.
- Develop an understanding of steps in neoplastic changes in the body and their effects in order to appreciate need for early diagnosis and further management of neoplasia.
- Understand mechanisms of common hematological disorders and develop a logical approach in their diagnosis and management.
- Develop understanding of the blood banking, blood donors & transfusion of blood & blood products, (components).
- Understand pathophysiology of infectious diseases in relation with tissue changes.

- Describe the various immunological reactions in understanding the disease process & tissue transplant.
- Develop an understanding for genetic disorders.
- Understand the vital organ function test of Kidney, liver & thyroid.

c. Skills

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

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

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

AETCOM Competencies for Second MBBS

Subject	Competency Number	Competency
Pathology	2.6	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as they pertain to refusal of care including do not resuscitate and withdrawal of life support.
	2.4 A	Demonstrate ability to work in a team of peers and superiors.
	2.4 B	Demonstrate respect in relationship with patients, fellow team members, superiors and other health care workers.
	2.7	Identify, discuss and defend, medico-legal, socio-cultural and ethical issues as they pertain to consent for surgical procedures.
Microbiology	Module 2.2 A	Describe and discuss the role of non-malfeasance as a guiding principle in patient care
	Module 2.2 B	Describe and discuss the role of autonomy and shared responsibility as a guiding principle in patient care
	Module 2.2 C	Describe and discuss the role of beneficence of a guiding principle inpatient care
	Module 2.2 D	Describe and discuss the role of a physician in health care system
	Module 2.2 E	Describe and discuss the role of justice as a guiding principle in patient Care
	Module 2.3	Describe and discuss the role of justice as a guiding principle in patient care
	Module 2.5	Identify, discuss and defend medico-legal, socio-cultural and ethical issues as it pertains to patient autonomy, patient rights and shared responsibility in health care
Pharmacology	Module 2.1	Demonstrate ability to communicate to patients in a patient, respectful, non-threatening, non-judgmental and empathetic manner.
	Module 2.8	Demonstrate empathy in patient encounters.

Resolution No. 4.19 of Academic Council (AC-51/2025):

Resolved to adopt the changes in AETCOM distribution for UG MBBS Admission 2024 Pathology , Microbiology, FMT and Pharmacology [ANNEXURE-41].

Annexure-41 of AC-51/2025

AETCOM Modules teaching and assessment

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

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

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

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

MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

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