



Sri Guru Ram Das University of Health Sciences, Sri Amritsar

Department of Pathology

Theory Paper A		Theory Paper B	
Topics	Marks Distribution	Topics	Marks Distribution
Cell injury and adaptations Infection and infestations Pediatrics and genetic diseases	12	Gastrointestinal tract Hepatobiliary diseases	24
Amyloidosis Immunopathology and AIDS Inflammation Healing and repair	14	Respiratory system Cardiovascular system	24
Neoplasia	12	Urinary tract Male genital tract Clinical pathology	18
Hemodynamics Environment and nutrition	12	Female genital tract Breast	12
Introduction to hematology Microcytic anemia Macrocytic anemia Hemolytic anemia Aplastic anemia	15	Endocrine disorders Bone and soft tissue	12
Leukocytic disorders Lymph node and spleen Plasma cell disorders	20	Skin Central nervous system Eye Basic diagnostic cytology	5
Hemorrhagic disorders Blood bank and transfusion	10		
AETCOM 2.1	5	AETCOM 2.8	5
Total	100	Total	100



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Guidelines for question paper as per the Medical Council of India, Competency Based Undergraduate Curriculum for Indian Medical Graduate.

Theory paper should include questions from core competencies and not from Non Core Competency

BLUEPRINT OF THEORY PAPER

Sr. No.	Type	Explanation	Topics	Distribution of marks as per weightage
1.	MCQ		10 MCQs for Paper A 10 MCQs for Paper B	10 X 1 = 10 10 X 1 = 10
2.	Long essay question	<p>1. The question should pose a Clinical/ Practical problem to the students and require them to apply knowledge and integrate it with disciplines. Avoid giving one liners as questions.</p> <p>2. Avoid giving one liners as questions.</p> <p>3. The question stem should be structured and marking distribution should be provided.</p> <p>4. Use action verbs from higher domains as given in this document.</p>	<p>Paper A (TWO Questions)</p> <ol style="list-style-type: none"> 1. Structured Long Essay Question from core competencies of: <ol style="list-style-type: none"> a. Cell injury b. Inflammation c. Amyloidosis d. Hemodynamics e. Blood banking f. Neoplasia 2. Case based Long Essay Question from core competencies of: <ol style="list-style-type: none"> a. Anemia b. Neoplasia c. Leukemia d. Plasma cell disorders e. Chronic inflammation f. Hemorrhagic disorders 	1X10=10 1X10=10

			<p>Paper B (Two Questions)</p> <p>1. Structured Long Essay Question from core competencies of:</p> <ol style="list-style-type: none"> ardiovascular system Urinary tract Gastrointestinal tract Female genital tract Male genital tract Respiratory tract Hepatobiliary diseases Endocrine disorders <p>2. Case based Long Essay Question from core competencies</p> <ol style="list-style-type: none"> Liver: jaundice and hepatitis Kidney: nephrotic and nephritic syndrome GIT: peptic ulcer and Inflammatory bowel disease Endocrine: diabetes mellitus and hyper/hypothyroidism CVS: RHD and MI 	<p>1X10=10</p> <p>1X10=10</p>
3.	Short Notes	<p>These provide opportunity to sample a wider content, albeit in a short time. The questions should be task oriented rather than 'Write a short note on xxx'.</p> <p>Preferably use verbs (as per List attached) in framing questions and structure them as far as possible</p>	<p>Paper A (8 Questions) From Core Competencies as per competency based undergraduate curriculum for the Indian Medical Graduate, VOLUME 1 Marks for each part should be indicated separately</p> <p>Paper B (8 Questions) From Core Competencies as per competency based undergraduate curriculum for the Indian Medical Graduate, VOLUME 1 Marks for each part should be indicated separately</p>	<p>8 X 5 = 40</p> <p>8 X 5 = 40</p>
4.	Reasoning Questions	<p>These provide excellent opportunities for testing integration, clinical reasoning and analytic ability of the student</p>	<p>Paper A (3 Questions) From Core Competencies as per competency based undergraduate curriculum for the Indian Medical Graduate, VOLUME 1</p> <p>Paper B (3 Questions) From Core Competencies as per competency based</p>	<p>3 X 5 = 15</p> <p>3 X 5 = 15</p>

			undergraduate curriculum for the Indian Medical Graduate, VOLUME 1	
5.	Applied Questions	Questions on applied aspect	Paper A (3 Questions) From Core Competencies as per competency based undergraduate curriculum for the Indian Medical Graduate, VOLUME 1 Paper B (3 Questions) From Core Competencies as per competency based undergraduate curriculum for the Indian Medical Graduate , VOLUME 1	3 X 5 = 15 3 X 5 = 15

Total Marks 200(Paper A- 100 marks, Paper B-100 marks)

Blueprinting in knowledge domain
(Representative example only. Actual figures may vary with the subject and phase)

Level	Topic A	Topic B	Topic C	Topic D	Total
Knowledge	1	2	1	1	5(20%)
Comprehension	1	1	1	2	5(20%)
Application	2	1	1	1	5(20%)
Analysis	1	1	2	2	6(24%)
Synthesis		1		1	2(8%)
Evaluation	1		1		2(8%)
Total	6(24%)	6(24%)	6(24%)	7(28%)	25(100%)

Verbs in various levels in Knowledge domain (Bloom's taxonomy)

Knowledge	Define, Describe, Draw, Find, Enumerate, Cite, Name, Identify, List, label, Match, Sequence, Write, State, Choose, Indicate, isolate, Order, Recognize, Underline
Comprehension	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalise, Identify, Illustrate, Interpret, Review, Summarise, Extrapolate, Update
Application	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis	Analyse, Characterise, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorise
Synthesis	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organise, Plan, Produce, Propose, rewrite
Evaluation	Appraise, Assess, Conclude, Critic, Decide, Evaluate, judge, Justify, Predict, Prioritise, Prove, Rank

The question part of the MCQ (item) is called STEM; correct answer is called the KEY and the rest of the options are called DISTRACTORS.

Steps in writing:

1. Select the specific learning objectives which you want to test.
2. Write the stem, it should be self-explanatory and complete, avoid using terms like (NOT, EXPECT, NEVER, ALWAYS, SOMETIMES) in the stem, if the terms are being used they should be in UPPERCASE and **bold** letter.
3. Write unambiguous and unarguably the correct answer to the stem.
4. Select the most plausible alternatives and arrange them in the form of options.
5. Avoid window dressing of the stem. This means adding superfluous and unnecessary words which confuses the student.
6. Abbreviations should be avoided.
7. Options should be grammatically parallel to the key, and should be parallel and have the same relation to the stem.
8. When writing options, avoid duplications or making options all inclusive, e 1-6, 6-10 etc.
9. The options should be arranged in rank order, eg. 256, 266, 280, 290 and not 290, 266, 280, 256.
10. "All the above" and "None of the above" should be avoided as an option.

Distribution of Marks: - Pathology

Papers		Maximum Marks	Minimum Passing Marks
Theory (Summative Assessment) (100 +100=200 Marks)	Theory Paper I (Sample paper Attached)	100	At least 40% marks in each paper with minimum 50% in aggregate (both papers together)
	Theory paper II(Sample paper Attached)	100	
Practical *(Summative Assessment) (60 + 40= 100 Marks) 1. Practical/clinical examinations will be conducted in the laboratories and /or hospital wards. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion.) 2. Viva/oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, identification of specimens, etc. is to be also assessed.	Histology Haematology Urine Blood grouping Spotting	80	50% (Practical + viva)
	Viva (oral examination should focus on the application and interpretation) (oral examination should focus on the application and interpretation) Charts, Graphs, Photograph & Instrument etc.	20	
Internal Assessment (Not added to the marks of the university examinations and should be shown separately in the grade card)	Theory	100	50% Combined in theory and practical (not less than 40% in each for eligibility for appearing for university examination
	Practical	100	

***During practical examinations you are requested to use different methods of assessment tools to improve authenticity. Please refer to competency based assessment module for UG medical education for more examples of assessment tools.**

Formative & Internal Assessment: - Internal assessment shall be based on day-to-day assessment. Efforts should be made to use multiple tools even for a given competency to improve validity and reliability of assessment

It shall relate to different ways in which learners participate in learning process which is day to day recorded in record book and log book in the form of :-

- a) Assignments,
- b) Preparation for seminar,
- c) Clinical case presentation,
- d) Preparation of clinical case for discussion,
- e) Clinical case study/problem solving exercise participation in project for health care in the community,
- f) Proficiency in carrying out a practical or a skill in small research project etc.

Regular periodic examination shall be conducted throughout the course as per following schedule:-

	Theory Internal Assessment (weightage in the form of marks)	Practical Internal Assessment (weightage in the form of marks)
First assessment test	15	10
Second assessment test	15	10
Send Up test	35	35
Class Test (best two)	10	10
Log Book	10	10
Practical record book	-	10
Attendance	5	5
Professionalism	-	10
ATCOM	10	-
Total	100	100



SRI GURU RAM DAS UNIVERSITY OF HEALTH SCIENCES, SRI AMRITSAR

Maximum Marks: 100

MBBS 2nd Professional Examination

Time: 3 Hours

Subject- Pathology (New Scheme)

Paper-A

- Note:**
1. Attempt all questions. Illustrate your answer with suitable diagrams where applicable.
 2. Question No. 1 (Multiple Choice Questions (A-J)) is to be attempted on OMR Sheet in first 15 minutes of the start of exam.
 3. Question No. 2-6 are to be attempted on the main answer book. No supplementary sheet shall be provided.
 4. Students must write QP code in the space provided on OMR sheet as well as on the title page of the main answer book.

QP Code: MBB201A

- 1. Multiple Choice Questions (MCQs):** [10X1=10]
- A. The most common site of origin for venous thrombi leading of pulmonary embolism is**
- a. Ascending aorta.
 - b. Portal vein
 - c. Deep leg veins
 - d. Right atrium
- B. Which among these is the example of locally invasive tumor , which doesnot metastasize?**
- a. Basal cell carcinoma
 - b. Squamous cell carcinoma
 - c. Adenocarcinoma
 - d. Squamous cell carcinoma
- C. Regarding ITP**
- a. Bleeding tendency becomes clinically evident with small drop in platelets count
 - b. It is commonly seen in children following bacterial infections
 - c. Splenectomy is beneficial in up to 40% patients
 - d. An increased no. of megakaryocytes are seen in bone marrow
- D. Allergic reactions are associated with increase in**
- a. Neutrophils
 - b. Lymphocytes
 - c. Eosinophils
 - d. Monocytes
- E. Multiple myeloma is characterized by**
- a. Lytic lesions on X Ray
 - b. Increased ESR
 - c. Increased monoclonal plasma cells
 - d. All of the above
- F. On a routine visit to the physician, an otherwise healthy 51-year-old man has a blood pressure of 150/95 mm Hg. If his hypertension remains untreated for years, which of the following cellular alterations would most likely be seen in his myocardium?**
- a. Atrophy
 - b. Hyperplasia
 - c. Metaplasia
 - d. Hypertrophy

- G. Which of the following is not seen in CML:**
- Basophilia
 - Thrombocytosis
 - Spleen not enlarged
 - Philadelphia chromosome positive
- H. In an experiment, antigen is used to induce an immediate (type I) hypersensitivity response. Cytokines are secreted that are observed to stimulate IgE production by B cells, promote mast cell growth, and recruit and activate eosinophils in this response. Which of the following cells is most likely to be the source of these cytokines?**
- CD4+ lymphocytes
 - Natural killer cells
 - Macrophages
 - Dendritic cells
- I. In iron deficiency anemia:**
- Plasma ferritin levels increase
 - Plasma transferrin levels are reduced
 - Dietary lack of iron is a common cause in industrialized countries
 - Total iron binding capacity is high
- J. A 60 year old male patient presented with non-healing ulcer on the leg, biopsy of which showed presence of tumor having polygonal cells along with keratin pearls and individual cell keratinization. What is the most likely diagnosis?**
- Squamous cell carcinoma
 - Basal cell carcinoma
 - Melanoma
 - Syringoma

- 2. Describe metastasis under following headings.** [5+5=10]
- Routes of metastasis
 - Mechanism of metastasis
- 3. A 7 years old male presents with weakness, yellowish discoloration of eyes and mild abdominal distension. On examination, he is pale, icteric and has splenomegaly. His Hb is 6.2g % Peripheral blood film shows presence of nucleated RBC's with raised reticulocyte count.** [2+6+2=10]
- Write the diagnosis and discuss its classification
 - Discuss its lab diagnosis.
- 4. Reasoning Questions:** [3X5=15]
- Discuss the laboratory diagnosis of Chronic myeloid leukemia.
 - Discuss the etiopathogenesis & lab diagnosis of Idiopathic thrombocytopenic purpura.
 - Discuss in detail about transfusion transmitted infection.
- 5. Write short notes on:** [8X5=40]
- Discuss FAB classification of Acute Myeloid Leukemia.
 - Discuss etiology & lab diagnosis of aplastic anemia.
 - Enumerate the differences between necrosis and apoptosis.
 - Classify Hodgkin's disease and describe its morphology.
 - Enumerate the differences between healing by primary and secondary intention.
 - Discuss the lab diagnosis of megaloblastic anemia?
 - Discuss the pathogenesis of renal edema?
 - Classify amyloidosis and discuss the various stains used for its diagnosis?
- 6. Write short notes on (Applied Questions)** [3x5=15]
- Describe the criteria for diagnosis of multiple myeloma.
 - Describe the Pathogenesis of Septic shock.
 - Discuss the components of informed consent and the settings where it is required?



SRI GURU RAM DAS UNIVERSITY OF HEALTH SCIENCES, SRI AMRITSAR

Maximum Marks : 100

MBBS 2nd Professional Examination

Time : 3 Hours

Subject- Pathology (New Scheme)

Paper-B

- Note:**
1. Attempt all questions. Illustrate your answer with suitable diagrams where applicable.
 2. Question No. 1 (Multiple Choice Questions (A-J)) is to be attempted on OMR Sheet in first 15 minutes of the start of exam.
 3. Question No. 2-6 are to be attempted on the main answer book. No supplementary sheet shall be provided.
 4. Students must write QP code in the space provided on OMR sheet as well as on the title page of the main answer book.

QP Code: MBB202A

1. Multiple Choice Questions (MCQs) : [10x1=10]

- A. What does the ECG show in Prinzmetal's angina?**
- a. ST segment depression
 - b. ST segment elevation
 - c. Absent T waves
 - d. Prolonged PR interval
- B. Most common leukemia associated with Down's syndrome is**
- a. AML
 - b. ALL
 - c. CML
 - d. CLL
- C. Reed Sternburg cells Immunophenotyping-**
- a. CD45+ve, CD30+ve, CD15+ve
 - b. CD45-ve, CD30+ve, CD15-ve
 - c. CD45-ve, CD30+ve, CD15+ve
 - d. CD45-ve, CD30-ve, CD15+ve
- D. After experiencing malaise and increasing icterus for 6 weeks, a 42-year-old man sees his physician. Physical examination shows jaundice, but there are no other significant findings. Serologic test results are negative for IgM anti-HAV and anti-HCV, and positive for HBsAg and IgM anti-HBc. Which of the following statements is most likely to apply to this patient's illness?**
- a. The source of the infection is a blood donation made 1 month ago
 - b. Complete recovery without sequelae is most probable
 - c. There is significant risk of development of fulminant hepatitis
 - d. There is significant risk of development of hepatocellular carcinoma
- E. What is the most common complication of peptic ulcer?**
- a. Acid reflux
 - b. Vomiting
 - c. Bleeding
 - d. Burning sensation
- F. A 25 year old young patient with a ragging cough and a 10kg weight loss along with chronic cough, fever and chest pain. Sputum examination shows presence of acid-fast organisms. Which of the following is the most likely causative agent in this case?**
- a. Klebsiella pneumonia
 - b. Mycoplasma pneumonia
 - c. Mycobacterium avium-intracellulare
 - d. Mycobacterium tuberculosis

- G. A 39 year old lady presented with palpable nodularity in the right breast. Pathologically, the lesion is composed of ducts distended by pleomorphic cells with prominent central necrosis. The lesion does not extend beyond the ductal basement membrane. Which of the following is the most likely diagnosis in this patient?**
- Comedocarcinoma
 - Medullary carcinoma
 - Sclerosing adenosis
 - Phyllodes tumor.
- H. The following tumour is characterised by biphasic pattern of growth:**
- Osteosarcoma
 - Osteochondroma
 - Synovial sarcoma
 - Malignant fibrous histiocytoma
- I. Glucose content of CSF is unaltered in the following type of meningitis:**
- Acute pyogenic meningitis
 - Acute viral meningitis
 - Cryptococcal meningitis
 - Tuberculous meningitis
- J. The most common germ cell tumour of the ovary is:**
- Dysgerminoma
 - Benign teratoma
 - Immature teratoma
 - Endodermal sinus tumour
- 2. Discuss Type 2 diabetes mellitus under the following headings** [5+5=10]
- Its aetiopathogenesis
 - lab diagnosis.
- 3. A 24 year old man developed malaise, fatigue and loss of appetite three weeks after a meal at a café. He noted passing dark urine. On physical examination, he has mild scleral icterus and right upper quadrant tenderness. Laboratory studies show serum AST of 62 U/L. His total bilirubin concentration is 3.9 mg/dL. His abate over the next 3 weeks.** [1+3+6=10]
- What is the most probable diagnosis?
 - What are the other investigations that can be done?
 - How to differentiate between varoiustypes of jaundice?
- 4. Reasoning Questions:** [3X5=15]
- Discuss the etiopathogenesis of peptic ulcers?
 - Describe the etiopathogenesis and morphological features of Good-Pasteur's Syndrome?
 - Discuss the pathogenesis of emphysema and writes its types?
- 5. Write short notes on:** [8X5=40]
- Describe the morphology and grading of astrocytoma?
 - Classify ovarian tumors and describe the morphology of Dysgerminoma?
 - Enumerate the differences between crohn's disease and ulcerative colitis?
 - Discuss the etiopathogenesis of Wilm's tumor and describe its morphology?
 - Describe the prognostic factors of breast carcinoma?
 - Describe the pathogenesis of asthma?
 - Classify bone tumour and describe morphology osteosarcoma?
 - Discuss the CSF findings in viral, bacterial and tubercular meningitis.
- 6. Describe Briefly:** [3x5=15]
- Discuss the lab diagnosis of myocardial infarction.
 - Discuss the Jone's criteria for the diagnosis of rheumatic heart disease?
 - Discuss the four guiding principle of bioethics?