

ATAL BIHARI VAJPAYEE MEDICAL UNIVERSITY, LUCKNOW
MBBS DEGREE EXAMINATION - 1st PROF PROFESSIONAL
SUPPLEMENTARY EXAM - MARCH 2024
BIOCHEMISTRY - PAPER – II

Time: 3 Hrs

Max. Marks: 100 Marks (80 Theory + 20 MCQs)

NOTE:

Attempt all questions.

This question paper consists of two sections: Section A - Multiple Choice Questions and Section B - Theory Questions.

Both sections have different paper codes. Write the correct paper code on the respective sheet.

Write the correct MCQ paper set on the OMR sheet.

Answer MCQs on the provided OMR sheet and theory questions on the provided answer booklet.

SECTION B - THEORY QUESTIONS

PAPER CODE: 2422230003

1. Long Answer Question

(15 Marks)

- Enumerate and discuss the 4 stages that occur in the conversion of the α -amino group to urea. (3 marks)
 - Describe the urea cycle with the help of a schematic diagram. (4 marks)
 - What is the normal range of urea in the blood? (1 mark)
 - Discuss the disorders associated with the urea cycle. (5 marks)
 - Which is a better marker of kidney function, urea or creatinine, and why? (2 marks)
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2. Clinical Case Scenario Based Structured Question (15 Marks)

A 52-year-old male presents to the emergency department of a hospital with excruciating pain in the left great toe. There was no history of injury; however, he gave a history of binge drinking the previous night. Medical history revealed that he is a chronic alcoholic with a history of renal stones. On examination, he had a mild fever (100.8°F), and his left toe was warm, swollen, and tender to touch. Lab investigation revealed: Serum Uric Acid 10.9 mg/dL (Normal 2-7 mg/dL), Urine Uric acid 480 mg/day (Normal 250-700 mg/day).

- i. What is the likely diagnosis? (1 mark)
- ii. What is the cause of pain and swelling of the joint? (2 marks)
- iii. Which drug may benefit this patient? Describe it in detail along with its mechanism of action. (5 marks)
- iv. Enumerate the primary and secondary causes that may lead to this disease. (2 marks)
- v. Describe briefly the salvage pathway of purines. (5 marks)

3. Short Note Questions (Within 500 Words) (5x6=30 Marks)

- i. Discuss the metabolism of tyrosine. Why is tyrosine considered a semi-essential amino acid? Name various inborn errors of metabolism associated with its pathway. Discuss any one in detail.
- ii. Enumerate and describe the role of a physician in the healthcare system.
- iii. Describe the structure and function of various immunoglobulins.
- iv. What is PCR? Describe the steps of PCR. Enumerate the diagnostic uses of PCR.
- v. Classify porphyrias with the enzyme defect. Mention signs and symptoms of acute intermittent porphyria.

4. Short Answer Questions (Within 100 Words) (5x4=20 Marks)

- i. Discuss Hartnup disease.
- ii. Discuss post-translational modifications.
- iii. Discuss any collagen-associated disorder.
- iv. Define tumor markers and enlist six clinically important tumor markers with associated cancer.
- v. Discuss protein targeting and sorting. Discuss any one associated disorder.

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