

KING GEORGE'S MEDICAL UNIVERSITY, LUCKNOW U.P.
DEPARTMENT OF BIOCHEMISTRY

MBBS Phase 1 2025 Batch Improvement Test

Time Allowed: 15 min

Maximum Marks 10

Note Attempt all questions and write the correct answer to the MCQs.

Q1. The substrate concentration at which reaction velocity is half of V_{max} is:

- a) K_m
- b) V_{max}
- c) K_i
- d) K_{cat}

Ans.

Q2. Deficiency of iodine leads to:

- a) Goiter
- b) Scurvy
- c) Beriberi
- d) Osteomalacia

Ans.

Q3. Vitamin K is essential for:

- a) Vision
- b) Blood clotting
- c) Collagen formation
- d) Nerve conduction

Ans.

Q4. Which isoenzyme is an earliest marker of acute myocardial infarction?

- a) LDH 1
- b) AST
- c) CK-MB
- d) H-FABP

Ans.

Q5. Which hemoglobin species shows the LEAST cooperative binding for oxygen?

- a) Adult hemoglobin (HbA)₂
- b) Fetal hemoglobin (HbF)
- c) Deoxyhemoglobin
- d) Myoglobin

Ans.

Q6. The chemical component present in maximum proportion in a cell is:

- a) Protein
- b) Lipid
- c) Carbohydrate
- d) Water

Ans.

Q7. Peptide bond is formed between:

- a) Two amino groups
- b) Two carboxyl groups
- c) Amino group of one amino acid and carboxyl group of another
- d) Side chains of amino acids

Ans.

Q8. Which lipid acts as a surfactant in lungs?

- a) Lecithin (DPPC)
- b) Cephalin
- c) Sphingomyelin
- d) Cardiolipin

Ans.

Q9. Transketolase is dependent on which of the following coenzyme:

- a) Coenzyme A
- b) NAD^+
- c) Tetrahydrofolate
- d) Thiamine pyrophosphate

Ans.

Q10. Niacin deficiency leads to:

- a) Beriberi
- b) Pellagra
- c) Scurvy
- d) Osteomalacia

Ans

KING GEORGE'S MEDICAL UNIVERSITY, LUCKNOW U.P.
DEPARTMENT OF BIOCHEMISTRY

MBBS Phase 1 2025 Batch Improvement Test

Date: 02.04.2026

Time Allowed: 1 hr 15 min

Maximum Marks – 40

Note: Attempt all questions in serial order. All parts of a question should be answered together. Illustrate your answer with suitable diagrams where required. Figures in parenthesis indicate marks allotted to a question

Short Answer Questions

(8x5 = 40)

- a) Discuss isoenzymes and their clinical importance.
- b) What are water-soluble vitamins? Enumerate them and describe the functions and deficiency manifestations of Vitamin C.
- c) Write a note on copper metabolism and its disorders.
- d) Discuss the structural organization of collagen. Write in brief the role of hydroxyproline and hydroxylysine in collagen stability.
- e) How does increase in 2,3-BPG affect the oxygen dissociation curve? Also discuss the effect of pH on the oxygen dissociation curve (Bohr effect).
- f) Describe the structure and functions of cholesterol.
- g) Explain the concept of reducing and non-reducing sugars with suitable examples.
- h) Describe the structure and functions of plasma membrane.

