

MANIPAL ACADEMY OF HIGHER EDUCATION
(Deemed University)

FIRST MBBS DEGREE EXAMINATION

SUBJECT: BIOCHEMISTRY– PAPER I

Tuesday, 10 July 2001

Time available: 3 Hours

Maximum Marks: 50

☉ ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE

☉ WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS

1. Discuss the different factors affecting enzyme activity. Add note on K_m value.
(6 + 2 = 8 Marks)
2. Discuss the energetics of TCA cycle.
(4 Marks)
3. Explain the shuttle mechanisms.
(4 Marks)
4. Write short notes on:
 - 4A. Fatty liver
 - 4B. Key reactions of gluconeogenesis
 - 4C. Pancreatic juice(3 x 3 = 9 Marks)
5. Explain the formation of special compounds from tyrosine and tryptophan.
(4 + 4 = 8 Marks)
6. Write the components of electron transport chain in order. Add a note on uncouplers.
(4 + 2 = 6 Marks)
7. Write short notes on:
 - 7A. Poly-amines
 - 7B. Lipoprotein lipase
 - 7C. Maple syrup urine disease(3 x 3 = 9 Marks)
8. What are essential amino acids. Name **four** of them.
(1 + 1 = 2 Marks)



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FIRST MBBS DEGREE EXAMINATION

SUBJECT: BIOCHEMISTRY– PAPER II
Wednesday, 11 July 2001

Time available: 3 Hours

Maximum Marks: 50

➡ ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE

➡ WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS

1. How is uric acid formed in the body? Add a note on gout. (5 + 3 = 8 Marks)
2. Explain the structure of tRNA with diagram and mention its function. (4 Marks)
3. What are tumour markers? Name any **two** tumour markers with their significance. (4 Marks)
4. Write briefly on: (2 x 3 = 6 Marks)
 - 4A. Cell cycle
 - 4B. Genetic code
 - 4C. Restriction endonucleases
5. Write a note on induction. (3 Marks)
6. Describe vitamin A under the following headings. (1 + 1 + 3 + 3 = 8 Marks)
 - 6A. Sources
 - 6B. RDA
 - 6C. Functions
 - 6D. Deficiency
7. Write short notes on: (3 x 3 = 9 Marks)
 - 7A. Metabolic acidosis
 - 7B. Fluid mosaic model of cell membrane.
 - 7C. Niacin
8. Give an account of role of kidney in acid base balance. (3 Marks)
9. Write briefly on the regulation of heme synthesis. (3 Marks)
10. Name the different buffer systems present in the body. (2 Marks)



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Tuesday, December 11, 2001

Time available: 3 Hours

Maximum Marks: 50

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- ➡ **ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE**
- ➡ **WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS**
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1. Define gluconeogenesis. Trace the pathway by which oxaloacetate undergoes gluconeogenesis.
(1+7 = 8 marks)
2. How HMG CoA is formed? What is its importance?
(2+2 = 4 marks)
3. Write the impact of four different factors on velocity of enzyme catalyzed reactions.
(4 Marks)
4. Write notes on:
 - 4A. Von Gierke's disease
 - 4B. Allosteric enzymes
 - 4C. Bile salts.
(3+3+3 = 9 marks)
5. Enumerate the compounds formed from glycine, giving their biochemical importance. Why glycine is nutritionally non-essential?
(8 Marks)
6. Excessive intake of carbohydrate results in the formation of triacyl glycerol. Explain.
(4 Marks)
7. Write the components of respiratory chain in proper sequence. Give the role of different inhibitors acting on respiratory chain.
(2+2 = 4 marks)

PLEASE TURN OVER

8. Write notes on:
- 8A. Transmethylation.
 - 8B. Denaturation of proteins.
 - 8C. Amphibolic intermediates of citric acid cycle.

(3+3+3 = 9 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST MBBS DEGREE EXAMINATION

SUBJECT: BIOCHEMISTRY– PAPER II

Wednesday, December 12, 2001

Time available: 3 Hours

Maximum Marks: 50

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- ➡ ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE
- ➡ WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS
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1. Describe the structure of DNA. (8 Marks)
2. How is uric acid formed in the body? Write a note on hyperuricemias. (3+2=5 Marks)
3. Write notes on mutations. (4 Marks)
4. Write short notes on:
 - 4A. Okazaki fragments
 - 4B. Southern blotting
 - 4C. Inhibitors of protein synthesis
 - 4D. Adenosine deaminase(2x4 = 8 marks)
5. How is heme synthesized? What are porphyrias? (4+4 = 8 Marks)
6. Give an account of the chemistry, sources, daily requirement, biochemical functions and deficiency symptoms of vitamin C. (5 Marks)
7. What are buffers? What are the buffer systems present in blood? (1+2 = 3 marks)
8. Explain biochemical findings in blood and urine in obstructive jaundice. (3 marks)
9. Write short notes on:
 - 9A. Rickets.
 - 9B. Biological value of proteins.
 - 9C. Creatinine clearance.(2x3 = 6 Marks)