

**MANIPAL ACADEMY OF HIGHER EDUCATION**  
(Deemed University)

**FIRST MBBS DEGREE EXAMINATION (NEW REGULATION)**

**BIOCHEMISTRY - PAPER I**

Tuesday, 21 November 2000

Time available : 3 Hours

Maximum Marks : 50

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- \* WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS  
\* ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE.
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- 1A. Describe the de novo synthesis of **fatty acids**. Add a note on the role of citrate in this process. (6+2=8 marks)
2. What is competitive inhibition ? What is its clinical application ? (2+2=4 marks)
3. How is lactose digested ? What is the fate of galactose thus obtained ? (1+3=4 marks)
4. How are bile acids synthesised ? What are their functions ? (3+2=5 marks)
5. Indicate the biochemical defect in:
- 5A. Tay-Sach's disease
- 5B. Von Gierke's disease
- 5C. Fructose intolerance
- 5D. Galactosemia (1x4=4 marks)
6. Discuss the metabolism of **tyrosine**. What are the biologically important compounds derived from tyrosine ? What are the inborn errors associated with this amino acid ? (4+2+2=8 marks)
7. Give explanation for **EACH** of the following:
- 7A. Excessive alcohol consumption can lead to fatty liver.
- 7B. Citric acid cycle is referred to as an amphibolic pathway.
- 7C. Excessive carbohydrate consumption leads to obesity. (4+4+3=11 marks)
8. Explain the difference between the following, giving examples :
- 8A. Glycogenic and ketogenic amino acids.
- 8B. Substrate level and oxidative phosphorylation. (3+3=6 marks)

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**FIRST MBBS DEGREE EXAMINATION (NEW REGULATION)**

**BIOCHEMISTRY - PAPER II**

Wednesday, 22 November 2000

Time available : 3 Hours

Maximum Marks : 50

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- \* WRITE BRIEF, CLEAR, RELEVANT AND LEGIBLE ANSWERS
  - \* ILLUSTRATE YOUR ANSWERS WITH DIAGRAMS AND FLOW CHARTS WHEREVER APPROPRIATE.
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1. Describe **transcription** under following aspects :
  - 1A. Initiation
  - 1B. Elongation
  - 1C. Termination
  - 1D. Name any two inhibitors of RNA synthesis. (2+2+2+2=8 marks)
2. Describe the salient features of Watson-Crick model of DNA. (4 marks)
3. Write two applications of restriction fragment length polymorphism. (2 marks)
4. Write a note on induction. (3 marks)
5. Define mutagens. Name two mutagens. (3 marks)
6. Write the principle of Southern blot technique and its two applications. (3+2=5 marks)
7. Explain the metabolism of **iron** under following headings :
  - 7A. Absorption and transportation
  - 7B. Biochemical function
  - 7C. Hemosiderosis (4+2+2=8 marks)
8. Write the principle of Van den Berg's test and its application. (3 marks)
9. How is calcitriol synthesized in the body ? Write a note on rickets. (3+2=5 marks)
10. Write short notes on : (3x3=9 marks)
  - 10 A. Acute intermittent porphyria
  - 10 B. Metabolic acidosis
  - 10 C. Protein calorie malnutrition