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MANIPAL ACADEMY OF HIGHER EDUCATION
(Deemed University)

FIRST MBBS DEGREE EXAMINATIONS – AUGUST 2002

SUBJECT: BIOCHEMISTRY– PAPER I

Tuesday, August 13, 2002

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 synthesis of glucose from lactate. Add a note on Cori's cycle.
(6+1 = 7 marks)

2. Define competitive inhibition. Give two examples of competitive inhibitors used in chemotherapy.
(2+1+1 = 4 marks)

3. Describe the synthesis and utilization of ketone bodies. Name two conditions where ketone bodies are synthesized in excess.
(2+2+2=6 Marks)

4. Describe the synthesis of urea. What is the normal serum level? Name two conditions which may lead to an increased serum urea level.
(5+1+2=8 marks)

5. Write short notes on:
 - 5A. Chemiosmotic hypothesis
 - 5B. Structure of immunoglobulins
 - 5C. Role of phospholipids in membrane
 - 5D. Covalent modification
 - 5E. Synthesis and functions of creatine

(5x5=25 Marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

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FIRST MBBS DEGREE EXAMINATIONS – AUGUST 2002

SUBJECT: BIOCHEMISTRY- PAPER II

Wednesday, August 14, 2002

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. Describe the process of replication. (5 Marks)
2. What are the tumour markers and how are they useful in diagnosis? (4 Marks)
3. Write the salient features of structure of DNA. In which phase of the cell cycle is DNA synthesized. (4 +1=5Marks)
4. Discuss the salvage synthesis of purine nucleotides. Add a note on Lesch-Nyhan syndrome. (4+2 = 6 marks)
5. Differentiate, and give one example each of a hemoglobinopathy, a thalassemia and a porphyria. (3 Marks)
6. What is balanced diet? (4 Marks)
7. Differentiate, and give two causes each, between metabolic and respiratory acidosis. (2+2 = 4 marks)
8. Discuss the role of vitamin B₆ in amino acid metabolism. (4 marks)
9. Write briefly on:
 - 9A. Liver function tests
 - 9B. Gene therapy
 - 9C. Radioisotopes in medicine
 - 9D. Normal serum levels of Na⁺, K⁺ and HCO₃⁻
 - 9E. Hemosiderosis.

(5x3 = 15 Marks)

