

Reg. No.

## MANIPAL UNIVERSITY





M. Sc. (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – AUGUST 20

PAPER I: CHEMICAL NATURE AND METHODS OF STUDY OF BIOCHEMICAL  
COMPOUNDS AND ENZYMES

Monday, August 04, 2008

Time available: 3 Hours

Maximum Marks:

-  **Answer any FIVE Questions.**
-  **All questions carry equal marks.**
-  **Write answers that are brief, clear, relevant and legible.**
-  **Illustrate your answers with neatly drawn and correctly labelled diagrams where appropriate.**

1. Describe the different types of enzyme inhibition with appropriate examples.
2. Describe the methods involved in DNA sequencing.
3. Write short notes on:
  - 3A. Partition chromatography.
  - 3B. Radioimmunoassay (RIA).
4. Write briefly on:
  - 4A. Southern blotting.
  - 4B. Flame photometry.
- 5A. Describe the principles and applications of ultracentrifugation.
- 5B. Describe different types of mutations, giving examples.
6. Describe the classification, structure and function of complex lipids.



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### PAPER III: CLINICAL BIOCHEMISTRY AND NUTRITION

Wednesday, August 06, 2008

Time available: 3 Hours

Maximum Marks: \_\_\_\_\_

- ✍ **Answer any FIVE Questions.**
- ✍ **All questions carry equal marks.**
- ✍ **Write answers that are brief, clear, relevant and legible.**
- ✍ **Illustrate your answers with neatly drawn and correctly labelled diagrams where appropriate.**

1. Describe the structure of pyridoxal phosphate and give an account of its metabolic role in human metabolism along with deficiency manifestation.
2. Describe the formation of adrenal cortical hormones and their metabolic role.
3. Give an account of daily requirement, absorption, factors affecting absorption, transport, storage, function and deficiency manifestations of iron.
4. Write short notes on:
  - 4A. Role of calcium as second messengers.
  - 4B. Protein caloric malnutrition.
  - 4C. Tumour markers.
  - 4D. Metabolic alkalosis.
5. Write briefly on:
  - 5A. Renal rickets
  - 5B. Bronze diabetes
  - 5C. Vitamin E
  - 5D. Porphyrias
6. Write short notes on:
  - 6A. Anti metabolites.
  - 6B. Fractional test meal.
  - 6C. Oncogenes.
  - 6D. Write the normal serum level and its significance of:

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### PAPER II: INTERMEDIARY METABOLISM

Tuesday, August 05, 2008

Time available: 3 Hours

Maximum Marks:

- ✍ **Answer any FIVE Questions.**
- ✍ **All questions carry equal marks.**
- ✍ **Write answers that are brief, clear, relevant and legible.**
- ✍ **Illustrate your answers with neatly drawn and correctly labelled diagrams where appropriate.**

1. Describe the hormonal regulation of carbohydrate metabolism, emphasizing the key enzymes.
2. Write an overview of ammonia metabolism in the body.
3. Give an account of any five inborn errors associated with amino acid metabolism. Describe the biochemical tests used to detect them.
4. Explain the transcription process and its regulation.
- 5A. Describe the metabolic role of different lipoproteins.
- 5B. Write a note on dyslipoproteinemias.
6. Write short notes on:
  - 6A. Ribosomes.
  - 6B. Telomeres.
  - 6C. Heat Shock proteins.
  - 6D. Proteasomes.

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