

MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – FEBRUARY 2010****PAPER I: CHEMICAL NATURE AND METHODS OF STUDY OF BIOCHEMICAL COMPOUNDS AND ENZYMES**

Monday, February 01, 2010

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

- ✍ **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 labeled diagrams wherever appropriate**

1. What are radioisotopes? Describe the clinical and therapeutic uses of radio isotopes.
2. What are carbohydrates? Classify them, giving suitable examples. Describe the chemistry and functions of any two mucopolysaccharides.
3. Discuss the methods of locating the functional groups of active site of enzymes.
4. Compare the structure of DNA and RNA. How to establish semi-conservative model of DNA replication?
5. Describe principles and applications of:
 - 5A. SDS-PAGE
 - 5B. Affinity chromatography
6. Write short notes on:
 - 6A. Restriction endonucleases
 - 6B. Compound lipids

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MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – AUGUST 2010****PAPER III: CLINICAL BIOCHEMISTRY AND NUTRITION**

Wednesday, August 04, 2010

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

- ✍ **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 labeled diagrams wherever appropriate.**

1. Give the various liver function tests. Evaluate these tests in the diagnosis of different types of jaundice. What tests further could be performed in urine?
2. Write short notes on:
 - 2A. Oncogenes
 - 2B. Ion channels
 - 2C. Abnormal hemoglobins
 - 2D. Iron absorption
3. Write briefly on:
 - 3A. Reference standard in clinical laboratory.
 - 3B. Blood gas analysis and its importance in critical care.
4. Write short notes on:
 - 4A. Hormone receptors
 - 4B. Balanced diet
 - 4C. Reactive oxygen species
 - 4D. Essential amino acids
5. Write briefly on:
 - 5A. Functions of zinc, selenium and copper
 - 5B. Role of folic acid in 1 carbon metabolism
6. What are the biochemical finding in a case of metabolic acidosis? Enumerate the causes of metabolic acidosis in an infant. How will you arrive at a diagnosis?

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