

MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – FEBRUARY 2013****PAPER I: CHEMICAL NATURE AND METHODS OF STUDY OF BIOCHEMICAL
COMPOUNDS AND ENZYMES**

Tuesday, February 05, 2013

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. Discuss the types, principles, instrumentations and uses of flame photometry.
2. **Write short notes on:**
 - 2A. Chromatography
 - 2B. Electrophoresis
3. Explain the structure and types of DNA. Add a note on base pairing rule and differences between DNA and RNA.
4. **Write briefly:**
 - 4A. Donnan-membrane equilibrium
 - 4B. Allosteric regulation of enzymes
5. **Write short notes on:**
 - 5A. In situ hybridization
 - 5B. Cosmids
 - 5C. ELISA
 - 5D. Classification of lipids
6. **Write briefly on:**
 - 6A. Polymerase chain reaction
 - 6B. Immunoglobulins



MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – FEBRUARY 2013****PAPER II: INTERMEDIARY METABOLISM**

Wednesday, February 06, 2013

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.**
- 1A. Describe briefly the role of mixed function oxidase in cholesterol metabolism. What is the principal co factor involved in cholesterol degradation?
- 1B. Give the dietary treatments to decrease cholesterol level in serum and explain its underlying rationale.
2. Describe the pathway by which pyrimidine nucleotides are synthesized denovo. How is it regulated?
3. Describe the replication process. Add a note on Telomeres.
4. Describe the anabolic uses of acetyl coA.
5. "TCA cycle is an amphibolic pathway". Justify.
6. **Write briefly:**
- 6A. Cyclooxygenase pathway of eicosanoids
- 6B. Glycine metabolism.



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MANIPAL UNIVERSITY

M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – FEBRUARY 2013

PAPER III: CLINICAL BIOCHEMISTRY AND NUTRITION

Thursday, February 07, 2013

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. Discuss the use of non-functional plasma enzymes in various disease diagnosis.
2. Describe the various laboratory tests carried out in the evaluation of renal function. Interpret the specific gravity test.
3. **Write short notes on:**
 - 3A. Monoclonal antibodies
 - 3B. Biochemical tests for cancer
 - 3C. Metabolic acidosis
 - 3D. Heme degradation
4. Discuss the vitamin D under following headings:
Formation, chemistry, sources, absorption, transport, storage, functions, requirement, deficiency diseases
5. **Write short notes on:**
 - 5A. Basal Metabolic Rate
 - 5B. Biological value of proteins
 - 5C. Protein Caloric Malnutrition
 - 5D. Transport proteins in blood
6. Explain the structure of cell membrane with a neat diagram. Add a note on functions of cell membrane, transport across membrane and disorders associated therewith.

