

MANIPAL UNIVERSITY

M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – JULY 2012

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

Thursday, July 12, 2012

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 isotopes? Explain the methods for detection and measurement of radioactivity. Give example for radioactive isotopes and their application in medicine.
2. **Write briefly on:**
 - 2A. Heteropolysaccharides
 - 2B. Prions
 - 2C. Isoenzymes
 - 2D. High energy compounds
3. **Write short notes on:**
 - 3A. DNA sequencing
 - 3B. Ultracentrifugation
 - 3C. Lyophilization
 - 3D. Collagen
4. Classify lipids in details and give examples. Enumerate the function of lipids in our body.
5. **Write short notes on:**
 - 5A. Southern blotting
 - 5B. Principles of pH meter
 - 5C. Hybridoma technique
 - 5D. Histones
6. **Write briefly on:**
 - 6A. Gel filtration chromatography
 - 6B. Cellulose acetate electrophoresis
 - 6C. Immuno electrophoresis
 - 6D. Polymerase chain reaction



MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – JULY 2012****PAPER II: INTERMEDIARY METABOLISM**

Friday, July 13, 2012

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. Trace the HMP shunt pathway. Explain in detail, the metabolic and clinical significance of this pathway.
 - 2A. Discuss the detoxification of ammonia.
 - 2B. Explain operon concept.
 3. Discuss the degradative steps of branched chain amino acids. Add a note of maple syrup urine disease.
 4. **Write short notes on:**
 - 4A. Inborn errors of metabolism of phenyl alanine
 - 4B. Post transcriptional modifications
 - 4C. Phospholipids synthesis
 - 4D. Synthesis of creatine
 5. **Write briefly on:**
 - 5A. Salvage pathways of nucleotides
 - 5B. Beta oxidation
 6. **Write short notes on:**
 - 6A. Inhibitors of protein synthesis
 - 6B. Regulation of cholesterol biosynthesis
 - 6C. S-Adenosyl methionine
 - 6D. Somatic recombination



MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – JULY 2012****PAPER III: CLINICAL BIOCHEMISTRY AND NUTRITION**

Saturday, July 14, 2012

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 different biochemical mechanisms of action of different classes of hormones.
2. Discuss Vitamin A under the subheadings – chemical nature, metabolism, biochemical role, requirement and deficiency manifestations.
3. **Write short notes on:**
 - 3A. Nutritional disorders
 - 3B. Biological value of proteins
4. Discuss the various investigations for the assessment of liver function.
5. Discuss the biosynthesis of heme and related disorders.
6. **Write notes on:**
 - 6A. Apoptosis
 - 6B. Tumour markers
 - 6C. Glucose 6 – phosphate dehydrogenase deficiency
 - 6D. Ceruloplasmin

