Reg. No.										

MANIPAL UNIVERSITY

M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – AUGUST 2011

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

Monday, August 08, 2011

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. Describe the principles of spectrophotometry and its applications in biochemical studies.

2. **Write shorts notes on:**

2A. Thin Layer Chromatography.

2B. Structure and composition of lipoproteins.

2C. Ionselective electrodes

2D. ELISA

3. Elaborate the structure of proteins emphasizing their importance with reference to their functions.

4. Describe factors influencing enzyme reaction. Give an account of isoenzymes.

5. **Write briefly on:**

5A. Diagnosis of genetic disease by southern blotting.

5B. Uses of Radio active isotopes.

5C. Cytokines.

5D. ATP synthase.

6. **Write briefly on:**

6A. Classification of lipids.

6B. DNA sequencing.

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M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – AUGUST 2011

PAPER II: INTERMEDIARY METABOLISM

Tuesday, August 09, 2011

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. Describe the various experimental approaches to study metabolism.

2. Give an account of tryptophan metabolism. Add a note on the physiologically important compounds formed from tryptophan.

3. **Write briefly on:**

3A. Beta oxidation of fatty acids

3B. Lipotropic factors

4. Glycolysis and gluconeogenesis do not constitute a futile cycle. Explain.

5. Discuss the process of replication.

6. **Write notes on:**

6A. Metabolism of LDL

6B. Transmythylation reactions

6C. Post-translational modifications

6D. Spliceosomes

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M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – AUGUST 2011

PAPER III: CLINICAL BIOCHEMISTRY AND NUTRITION

Wednesday, August 10, 2011

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 role of folic acid and vitamin B-12 in metabolism. Add a note on the deficiency states.

2A. Discuss the role of 'oncogenes' in cancer

2B. Kwashiorkor

3. Describe the biochemical assessment of a patient with jaundice.

4. **Write briefly on:**

4A. Metabolic acidosis

4B. Quality control

4C. Methemoglobinemia

4D. Reactive oxygen species

5. Discuss the metabolism of iron.

6. **Write briefly on:**

6A. cAMP as a second messenger

6B. Facilitated transport