

MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – JULY 2014****PAPER I: GENERAL BIOCHEMISTRY AND INSTRUMENTATION**

Thursday, July 10, 2014

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

✍ Answer ALL the questions

✍ Long Essay

1. Discuss in detail the different steps of column chromatography with its applications. (15 marks)

2. Give the classification of carbohydrates with examples and their biological importance. (15 marks)

3. Write short notes on:

3A. Polyacrylamide gel electrophoresis

3B. Ion selective electrodes and their use

3C. Detection and measurement of radioactive isotope

3D. Structural organisation of proteins and conformation

3E. Polyunsaturated fatty acids and their importance

3F. Recombinant DNA technique and cloning procedure

3G. Structure of immunoglobulins and their functions

3H. Immunoelectrophoresis and its applications

3I. Types of enzyme inhibition and their application

3J. Cell fractionation and the marker enzyme for each fraction

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) BIOCHEMISTRY DEGREE EXAMINATION – JULY 2014****PAPER II: METABOLISM AND NUTRITION**

Friday, July 11, 2014

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

✍ Answer ALL questions.

✍ Long Essay

1. Write the reactions of De novo synthesis of purine nucleotides. Add a note on the regulation. (12+3 = 15 marks)

2. Phenylalanine is both ketogenic and glucogenic. Explain. Write the reactions of synthesis of two biologically important compounds from phenylalanine/tyrosine. (10+5 = 15 marks)

3. Short answers describe the following:

3A. Polyol pathway of glucose and its implication in diabetes mellitus

3B. Lactose intolerance

3C. Amphibolic role of TCA cycle and the anaplerotic reactions

3D. Degradation of purine nucleotides and effect of allopurinol in this process

3E. von-Gierke's disease

3F. Compounds derived from sulphur containing amino acids and their biological role.

3G. Free radicals and enzymatic antioxidant system

3H. Folate trap hypothesis and anemia

3I. Assessment of quality of dietary proteins

3J. Vitamin A deficiency causes night blindness. Explain.

(7 marks × 10 = 70 marks)

