

MANIPAL UNIVERSITY

MD (BIOCHEMISTRY) DEGREE EXAMINATION – APRIL 2013

SUBJECT: PAPER I: PHYSICAL ORGANIC ASPECTS OF BIOCHEMISTRY,
BIOSTATISTICS, BIOCHEMICAL TECHNIQUES

Tuesday, April 02, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

1. Classify lipoproteins. Discuss lipoproteins under:
a) Metabolism b) Methods of estimation c) Clinical significance
(20 marks)
2. Explain various protein conformations and methods to elucidate the same.
(20 marks)
3. Structure of glycosaminoglycans
(10 marks)
4. Polymerase chain reaction
(10 marks)
5. Isoelectric focusing
(10 marks)
6. Measurement of radioactivity
(10 marks)
7. Structure function relationship of hemoglobin
(10 marks)
8. Serine proteases
(10 marks)



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SUBJECT: PAPER II: CELL PHYSIOLOGY, MOLECULAR BIOLOGY, HUMAN GENETICS

Wednesday, April 03, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. Discuss the causes, investigations and treatment of hypercholesterolemia. (20 marks)
2. Describe the synthesis of biologically important products from tryptophan. Add a note on associated disorders and discuss the biochemical investigations for the detection of these disorders. (20 marks)
3. **Briefly describe:**
 - 3A. Metabolic changes during fasting
 - 3B. Importance of PRPP
 - 3C. One carbon compounds
 - 3D. Detoxification reactions(10×4 = 40 marks)
4. Describe the process of eukaryotic translation. Write the details of post-translational modifications and inhibitors of translation. (20 marks)



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SUBJECT: PAPER III: INTERMEDIARY METABOLISM, MACRO AND
MICRONUTRIENTS, INBORN ERRORS OF METABOLISM

Thursday, April 04, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. With the help of appropriate examples, explain the regulation of enzyme activity. (20 marks)
2. Discuss vitamin D metabolism, functions, regulations and associated disorders. (15 marks)
3. Membrane transport systems. (20 marks)
4. **Write notes on:**
 - 4A. Biochemical importance of trace elements
 - 4B. Metabolic derangements in obesity
 - 4C. Mechanism of muscle contraction(10×3 = 30 marks)
5. Describe the Biochemical functions, reactions and deficiency disorders of Vitamin B12 and Folic acid. (15 marks)



MANIPAL UNIVERSITY**MD (BIOCHEMISTRY) DEGREE EXAMINATION – APRIL 2013****SUBJECT: PAPER IV: CLINICAL BIOCHEMISTRY, HUMAN NUTRITION,
ENDOCRINOLOGY AND IMMUNOLOGY**

Friday, April 05, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

1. Discuss the extended lipid profile and its diagnostic use.
(25 marks)
2. Describe the biochemical investigations and interpretation of thyroid function tests.
(20 marks)
3. **Write briefly on:**
 - 3A. Homocystinuria
 - 3B. Westgard rules
 - 3C. Gestational diabetes mellitus
(10×3 = 30 marks)
4. How would you investigate an adult patient presenting with Jaundice?
(25 marks)

