

PARUL UNIVERSITY
FACULTY OF MEDICINE
M.B.B.S DECEMBER 2021 EXAMINATION

Year: 1**Subject Code: 19100185****Subject Name: Biochemistry Paper-I****Date: 24.12.2021****Time: 10:00am to 01:00 pm****Total Marks: 100****Instructions:**

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.

SECTION – A

Q.1 Structured Essay question (No choice) 2x10 (20)

1. A 57 year old man was brought to the emergency with a history of 12 hours shortness of breath, coughing and tightness in the chest region. The symptoms appeared suddenly. His past medical history is significant for diabetes mellitus and hypertension. He is a known smoker and alcoholic. At the time of admission his B.P was 180/100 mm of Hg. The laboratory tests showed CKMB as 45 IU/L (Normal range 5 to 25 IU/L)
 - i) Suggest the probable diagnosis? (1)
 - ii) Define iso-enzymes. (1)
 - iii) Discuss different iso-enzyme forms of any two relevant enzyme along with their characteristics, and clinical significance in the above case (8)
2. A 25 year old lady who was 10 weeks pregnant went for a routine check-up. Her Fasting blood glucose was 130 mg/dl and HbA1c was 6.6 %. She did not have any previous history of Diabetes Mellitus.
 - i) What is the probable diagnosis? Justify the same (3)
 - ii) Give a detailed account of OGTT (5)
 - iii) What is renal glycosuria (2)

Q.2 Write short notes on : (Any Four out of Five) 4x5 (20)

1. What are Phospholipids? Mention the composition and functions of any 4 phospholipids.
2. Explain TCA cycle along with its energetic.
3. A 3 year old girl was brought to the dental OPD with complain of delayed dentition. On examination her legs were crooked, she had bumps in her rib cage, and her legs were curved and she had difficulty in walking. Parents revealed her leg was fractured twice in the last 1 year.
 - i) Suggest the probable diagnosis? (1)
 - ii) Which nutrient deficiency causes this disease? (1)
 - iii) Normal biochemical functions of the deficient nutrient (3)
4. A 20 year male came to the surgical OPD with complains of severe abdominal pain since 3 hours. USG examination revealed Pancreatitis.
 - i) Which Blood investigations will you advice this patient. (2)
 - ii) Define plasma functional and plasma non functional enzymes (3)
5. Compounds which affect electron transport chain and oxidative phosphorylation.

SECTION – B

Q.3 Explain briefly on: (any Three out of Four) 3x6 (18)

1. 63 year old women went for a routine health check-up which revealed the following. Serum Total Cholesterol: 230 mg/dl, Serum Triglyceride : 291 mg/dl, HDL : 20 mg/dl.
 - i) What medical advice will you give her ? (2)
 - ii) Give a detailed account of HDL metabolism (4)
2. Diagnostic uses of enzymes in various diseases.
3. Beta Oxidation of Fatty acids.
4. Name the water soluble vitamins. (3)
Mention co-enzymes of Riboflavin with suitable examples. (3)

Q.4 Write short notes on: (any Three out of Four) 3x4 (12)

1. What is Night blindness? Explain Walds Visual Cycle in detail.
2. How are toxic and harmful substances rendered less harmful and more water soluble in the body? Explain Phase –I reactions
3. Glycosaminoglycans and their clinical importance.
4. Draw a neat labeled diagram of Mitochondria, mention its functions and name any two mitochondrial disorders.

SECTION – C

Q.5 Write short notes on: (Any Five out of Six) 5x5 (25)

1. Explain an Ideal Doctor Patient relationship.
2. Rate limiting steps of Glycolysis
3. Laboratory diagnosis of Diabetes Mellitus.
4. Mechanism of steroid hormone action
5. BeriBeri
6. Essential fatty acids.

Seat No: _____

EnrollmentNo: _____

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Q.6 Answer in MCQ

5x1 (5)

1. 21 year old female came with bleeding gums, loss of teeth and malaise. Which is the probable vitamin deficiency?
 - (a) Vitamin A
 - (b) Vitamin C
 - (c) Vitamin K
 - (d) Vitamin B 1
2. A premature infant had Respiratory distress syndrome. History revealed that the baby was born at 27 weeks and mother was not given steroid injections. What will be the Lecithin Sphingomyelin (L-S) ratio in this case?
 - (a) Less than 1.5
 - (b) More than 1.5
 - (c) No significance of L-S ratio in this case
 - (d) None of the above
3. Diarrhoea, dermatitis and dementia occurs due to deficiency of
 - (a) Thiamine
 - (b) Niacin
 - (c) Riboflavin
 - (d) Folic acid
4. Glucose 6 Phosphate Dehydrogenase deficiency causes all EXCEPT,
 - (a) RBC membrane damage
 - (b) Hemolysis
 - (c) Deficiency of NADPH
 - (d) Obstructive jaundice
5. Which of the following is an anticoagulant?
 - (a) Heparin
 - (b) Vitamin K
 - (c) Heparin
 - (d) Vitamin E