

M.Sc Semester-2 Examination

409

MLT

Time : 2-30 Hours]

April-2024

[Max. Marks : 70

- Q-I
- 1 Explain the structure of DNA and components of nucleotide structure.
 - 2 Write a detailed note on saturated and unsaturated fatty acids.

OR

(14)

- 1 List out the functions of protein and write any five in detail.
- 2 Write a note on sterols. What is HDL and LDL? What is the role of them?

- Q-II
- 1 Discuss the diagnostic uses of enzymes in medical applications.
 - 2 Describe enzymes utilized in evaluating liver disease.

OR

(14)

- 1 Provide an overview of fundamental enzyme kinetics, including an explanation of the K_m value.
- 2 Write the note on an enzymes used for heart disease assessment.

- Q-III
- 1 Describe the main steps of glycolysis and explain how ATP is generated in this pathway. Where does glycolysis occur in the cell?
 - 2 Discuss the genetic and biochemical basis of phenylketonuria (PKU). Explain how newborn screening and dietary management can help prevent the complications associated with PKU.

OR

(14)

- 1 Discuss the role of insulin in regulating blood glucose levels. Also, explain what happens to insulin production and function in individuals with type 1 and type 2 diabetes mellitus.
- 2 Explain the concept of ketogenesis and its relationship to lipid metabolism. Under what physiological conditions does ketogenesis occur, and why is it important?

(P.T.O.)

- Q-IV**
- 1 Explain the basic principles of spectrophotometry, including the interaction of light with matter, absorption of light, and Beer-Lambert Law.
 - 2 Describe the principles of high-performance liquid chromatography as a separation technique. Discuss the applications of HPLC analysis of biological molecules in clinical settings.

OR

(14)

- 1 Describe the principles of enzyme-linked immunosorbent assay (ELISA). Discuss any two applications in clinical settings.
- 2 Describe the principles of gas chromatography (GC) as a separation technique. Discuss the applications of GC analysis of biological molecules in clinical settings.

Q-V Answer any SEVEN out of TWELVE.

(14)

- 1 What is the role of miRNA? 02
 - 2 Name the fat soluble vitamins. 02
 - 3 Give difference between nucleotide and nucleoside? 02
 - 4 What is the significance of measuring ALT levels in patients? 02
 - 5 State the enzyme typically elevated in myocardial infarction. 02
 - 6 What does LDH stand for, and why is it important? 02
 - 7 What is the primary difference between glycolysis and gluconeogenesis? 02
 - 8 Name the molecule that directly links the citric acid cycle to the electron transport chain. 02
 - 9 What is the primary energy source for the brain during prolonged fasting? 02
 - 10 Write the concept of standard curve in spectrophotometric analysis. 02
 - 11 How does the choice of stationary phase affect the separation in HPLC? 02
 - 12 What information can be obtained from a Western blot analysis? 02
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