

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labeled diagrams wherever necessary.
4. For Q 2, Q 3 and Q 4 attempt A and B OR C and D.

Q 1 Do as directed (Any fifteen)**15**

1. Which groups are involved in peptide bond formation?
2. Name chemical reagent which can be used for protein precipitation by process of 'salting out'.
3. Proteins in which the ratio (Lys + Arg) / (Glu + Asp) is less than 1 are referred to as acidic proteins. (True OR False).
4. Enlist the covalent bonds found in tertiary structure of proteins.
5. Give an example of fibrous proteins.
6. The alpha-helix is stabilized by extensive _____ bonding.
a. hydrogen b. disulfide c. peptide d. hydrophobic
7. Serine, threonine and tyrosine are _____ group containing amino acids.
a. hydroxyl b. sulfur c. phenyl d. halogen
8. Explain the term co-enzyme.
9. State true / false: A numerically small (low) K_m value reflects a low affinity of the enzyme for substrate.
10. What do you mean by irreversible inhibition?
11. Give one significance of the enzyme alkaline phosphatase.
12. What are isozymes?
13. State true / false: Extremes of pH does not denature the enzyme.
14. What is a stationary phase in a paper chromatography?
15. Give full form of the abbreviation HPLC.
16. Give an equation for the Beer-Lambert's law.
17. What is the partition coefficient?
18. What is the significance of the molar extinction coefficient?
19. What is the use of the Retardation Factor in chromatography?
20. Which instrument will need a cuvette?

- Q. 2 A Elaborate on tertiary structure of proteins. 08
- Q. 2 B Draw structure of amino acids which have a Sulfur group. 07
- OR
- Q. 2 C Discuss the properties of proteins. 08
- Q. 2 D Give an account on isoelectric pH of proteins. 07
- Q. 3 A With appropriate examples explain how enzymes are classified on the basis of the reactions they catalyse. 08
- Q. 3 B Elaborate on non-competitive enzymes. 07
- OR
- Q. 3 C Discuss the various factors that influence the reaction velocity of enzymes. 08
- Q. 3 D Describe the applications of enzymes in various industries. 07
- Q. 4 A What are the principles and components of chromatography? 08
- Q. 4 B Give an account of column chromatography by giving suitable examples. 07
- OR
- Q. 4 C Compare and contrast paper and Thin Layer Chromatography. 08
- Q. 4 D Give an account of colorimetry. 07
- Q. 5 Write Short notes on **any three** of the following 15
- a. Sorenson's reaction with amino acids
 - b. Michaelis-Menton constant.
 - c. Zymogens
 - d. Chemistry of coloured compounds.
 - e. Retardation Factor in chromatography.
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