ST. JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS

CUDDALORE – 607001

PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY

SUBJECT: ENZYMES

SUB CODE: PBC806S

CLASS: I M.Sc BIOCHEMISTRY

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SECTION A

I ANSWER IN ONE SENTENCE

1. What is electrophilic attack?
2. What is acid base catalyst?
3. What is covalent catalyst?
4. Q10.
5. Activation energy.
6. Serine protease.
7. Homotrophic modulator.
8. IC_{50}
9. What is temperature co-efficient?
10. Define active site.
11. What is k_{cat}?
12. Define turnover number.
13. What do you mean by specificity of enzymes?
14. What is collision?
15. What is k_m?
16. Define co-operativity.
17. What is cross linking?
18. Define Kinetics.
19. Define uncompetitive inhibition?
20. What is Suicide inhibition?
21. Define Positive Co-operativity.
22. Define Immobilization.
23. What is k_m ? Write any two significances.
24. What are suicidal inhibitors?
25. Define first law of thermodynamics.

26. What are endoenzymes and exoenzymes?
27. What does ratio K_{cat}/k_m indicates?
28. Define isoenzymes.
29. What are oligomeric enzymes?
30. Give an examples for the clinical use of an immobilize enzyme.

SECTION B

II ANSWER THE FOLLOWING

1. Differentiate competitive and non competitive inhibition.
2. Explain briefly how enzymes are inhibited irreversibly.
3. Explain briefly about the strain and the distortion theory.
4. Explain the laws of thermodynamics.
5. Write a brief note enthalpy.
6. Describe the significances of km and v_{max}.
7. Give a short account on LB plot.
8. Explain metal ion catalysis of enzyme action.
9. Describe site directed mutagenesis of enzymes.
10. Explain the general mechanisms of enzyme regulation.
11. Write briefly on enzyme co-operativitiy.
12. Explain non- competitive inhibition of enzymes with suitable examples.
13. Discuss the kinetic parameters of immobilized enzymes.
14. List the characteristic features of enzymes.
15. Write a short note on the enzymes modification by site directed mutagenesis.
16. Define transition state and activation energy of enzymes.
17. Give a brief account on ping-pong mechanism.
18. Describe in brief the role of proximity and orientation in enzymes catalysis.
19. Write a short note on lock and key model of enzyme action.
20. What are Allosteric inhibitions of enzymes?
21. Explain Hill and scatchard plots and their significance.
22. What is suicide inhibition of enzymes?
23. Explain the uses of substrate analogues in active site determination.
24. How the hydrogen ion concentrations affect the enzyme activity?
25. Discuss the mechanism of bi-substrate reaction.
26. Write a note on enzyme specificity.
27. Explain the koshland model of enzyme action.
28. Describe the mechanism of actions of lysozyme.
29. Write a short note on covalent modification of enzyme.
30. Explain the types of co-operativity.

31. Explain any two methods of enzymes immobilization.
32. How are enzymes classified?
33. Write a note on general characteristic features of enzymes.
34. Define the following terms a) collision b) transition state energy c) activation energy
35. Discuss the types of catalysis.
36. Explain the scatchard plot for a single ligand protein binding.
37. Write a note on feedback inhibition.
38. Explain about the competitive inhibition.
39. Comment on irreversible regulations.
40. Write notes flavoprotein enzymes.
41. Explain why most of an enzymes are derivatives of vitamins?
42. Describe the salient features of a hyperbolic curve of an enzyme catalysed reaction.

SECTION C

III ANSWER THE FOLLOWING

1. Explain the various methods of identification of binding and catalytic sites of enzymes.
2. Discuss about the different methods of enzyme immobilization.
3. Discuss the mechanism of actions of Lysozyme.
4. What is competitive inhibition? Derive the kinetic expression for the competitive inhibition.
5. Discuss the various factors that affect enzyme activity
6. Explain the classification of bi-substrate reactions with suitable examples.
7. How will you investigate the active site of enzymes ? Illustrate with suitable examples.
8. Describe co-operativity with reference to Aspartate transcarbomylase.
9. Explain the various methods of immobilization of enzymes with suitable examples.
10. How are enzymes named and classified according to IUB-EC?
11. Derive M-M equation. Add a note on the significances of km.
12. Describe the mechanism of action of lysozyme with suitable illustration.
13. Describe in detail the general mechanism of enzyme regulations.
14. Describe in detail the methods to determine the active site residues.
15. Give an elaborate note on methods of enzyme modification.
16. Derive M-M equation of single substrate reaction. State the significance of km and $v_{max.}$
17. Why the enzyme catalyst is superior? Explain the mechanism of actions of chymotrypsin.
18. Discuss about Allosteric enzymes and its regulation with example.
19. Explain the kinetic differentiation and graphical analysis for competitive and non competitive inhibition.
20. 1. Note on Trapping. 2. How are enzymes classified?
21. Explain about the various factors affecting enzyme activity.

22. Write a short note on methods of identifications of binding and catalytic sites of enzymes.
23. Describe the different types of reactions in which COA is involved.
24. Explain the application of enzymes in detail.