LS2HPHC550 Reg. No.: | | | | | | | | |

St Aloysius (Deemed To Be University)

Mangaluru

Semester II- P.G. Examination- M.Sc. Biochemistry

April - 2025

ENZYMOLOGY

Time: 2½ Hours **Max Marks: 60**

Note: Draw neat labeled diagrams/schematic sketches/structures wherever Necessary.

SECTION - A

I. Write short notes on any FIVE of the following. **(5x3=15)**

1. A laboratory experiment shows that an enzyme becomes inactive at pH 2. What conclusion can you draw about the enzyme's optimal pH?
2. Why is it necessary to maintain specific temperature and pH conditions during enzyme purification?
3. Describe the significance of determining the molecular weight of an enzyme, and which techniques are commonly used for this purpose?
4. For an enzyme that follows an ordered bisubstrate mechanism, describe the sequence of substrate binding and product release. How does this order affect the reaction outcome?
5. List three advantages of enzyme immobilization over free enzymes.
6. How do enzymes differ from inorganic catalysts?
7. Explain the role of proximity and orientation effects in enzyme catalysis.
8. What distinguishes abzymes from traditional antibodies?

SECTION - B

II. Write explanatory notes on any FIVE of the following. **(5x5=25)**

9. Can you differentiate between hydrolases and lyases in terms of their catalytic mechanisms?
10. Explain the concept of different types enzyme specificity and provide examples.
11. Describe the principle kinetic enzyme assay.
12. Give an example of an affinity label commonly used in enzyme studies and explain its mechanism of action.
13. Recall the steps of zymogen activation in digestive enzymes.
14. Describe the function of cholinesterase and its application in clinical diagnostics.
15. Explain how serine proteases exhibit specificity for their substrates.
16. Explain the characteristic features of fast reaction kinetics.

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