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Reg. No.....

Name.....

M.Sc. (BIOCHEMISTRY) DEGREE (C.S.S.) EXAMINATION, FEBRUARY 2025

Third Semester

BC 3M 003 PC9—ENZYMOLOGY

(2018 Admissions—First Mercy Chance/2017 Admissions—Second Mercy Chance, 2016 Admissions—Third Mercy Chance and 2015 Admissions—Last and Final Special Mercy Chance)

Time : Three Hours Maximum Weight : 30

Part A (Short Answer Type)

Answer any **five** *of the following.*
Weight 1 *each.*

1. What is Transition state of a reaction ?
2. What are “Abzymes” and “Ribozymes” ?
3. What is Kcat/Km ? What is its significance ?
4. Why is the pH-Activity profile of an enzyme catalysed reaction bell shaped ?
5. What is “Turnover Number“ of an enzyme? How is it calculated ?
6. What is “suicide Inhibition” ? Give an example.
7. Explain the EC number of any one enzyme
8. Why are some enzymes made as zymogens ? Give an example.

(5 × 1 = 5)

Part B (Short Essay Type)

Answer any **five** *of the following.*
Weight 2 each.

9. Explain the nomenclature of enzymes. What would be a systematic name for alcohol dehydrogenase ?
10. Explain the coenzymic action of Biotin.

Turn over

11. Explain "Coupled enzyme assay" with an example. What are the advantages of this assay ?

12. Explain the principle of "Salting in" and "salting out" in Enzyme purification. Why are enzymes precipitated by adding ethanol ?

13. How would you determine the subunit composition of an enzyme ?

14. What are "Tight Binding" inhibitors ? How will you find whether an inhibitor is tight binding ?

15. What are Isoenzymes ? Explain the isoenzyme properties of LDH.

16. What is enzyme engineering ? What are its applications ?

(5 × 2 = 10)

Part C (Long Essay Type)

Answer any **three** *of the following.*
Weight 5 *each.*

17. Using the King-Altman method, derive the expression for the velocity of an enzyme catalysed reaction.

18. Explain how you will distinguish between competitive, uncompetitive and non competitive inhibition ?

19. Explain the Catalytic and Regulatory subunit composition and Allosteric properties of Aspartyl Transcarbamoylase.

20. Discuss the design of enzyme inhibitors as drugs.

21. Describe the structure and function of Pyruvate dehydrogenase complex as a multi enzyme complex.

22. Give an account of the clinical applications of enzymes.

(3 × 5 = 15)