REV-01
BBT/32/37

2022/07

B. Sc. BIOTECHNOLOGY
FOURTH SEMESTER
ENZYMOLOGY
BBT – 404

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs. **Full Marks : 70**

(PART-A: Objective)

Time : 20 min. **Marks : 20**

Choose the correct answer from the following: ***1X20=20***

1. Which of the Following is produced with the Combination of Apoenzyme and Coenzyme:
   a. Holoenzyme
   b. Enzyme substrate complex
   c. Prosthetic group
   d. Enzyme product complex

2. Which of the following reaction is catalyzed by Lyase?
   a. Breaking of bonds
   b. Formation of bonds
   c. Intramolecular rearrangement of bonds
   d. Transfer of group from one molecule to another

3. Which of the following function is catalyzed by Racemases?
   a. Removal of water
   b. Intramolecular transfer of a functional group
   c. Interconversion of L and D stereoisomers
   d. Inversion of asymmetric carbon atom

4. What is the count of genes that determine the synthesis of one enzyme?
   a. 1
   b. 4
   c. 8
   d. 16

5. The reaction rate is fastest in case of……..catalyzed reaction.
   a. Ion
   b. Enzyme
   c. Metal
   d. Non metal

6. Choose non protein nature of the biomolecule.
   a. Enzyme
   b. Apoenzyme
   c. Ribozyme
   d. Polypeptide

7. Organic non protein part of enzyme is……
   a. Apoenzyme
   b. Cofactor
   c. Metal ion
   d. Coenzyme

8. Vitamins can act as ……..
   a. Coenzymes
   b. Energy rich compound
   c. Both are correct
   d. Immune boost

9. The rate of the is determined by the.....reaction.
   a. First [2] b. Chain
   c. Feedback d. Slowest

10. K is.....
   a. Rate of the reaction b. Reaction rate constant
   c. Forward rate of reaction d. Reverse rate of reaction

11. Zymogen or proenzyme is a
   a. Modulator b. Vitamin
   c. Enzyme precursor d. Hormon

12. SDS PAGE is a method of enzyme.....
   a. Separation b. Quantification
   c. Extraction d. Identification

13. Enzyme catalysis is effected by.....
   a. Substrate concentration b. Temperature
   c. Soil d. Both A and B

14. At steady rate .....
   a. Rate of forward reaction =Rate of reverse reaction
   b. Rate of forward reaction >Rate of reverse reaction
   c. Rate of forward reaction <Rate of reverse reaction
   d. Rate of forward reaction ≤Rate of reverse reaction

15. The plot is straight in case of.....experiment.
   a. Michaelis b. Line weaver
   c. Menten d. Michaelis and Menten

16. Enzyme catalysing rearrangement of atomic grouping without altering molecular weight or number of atom is
   a. Ligase b. Isomerase
   c. Oxidoreductase d. Hydrolase

17. In competitive enzymatic reaction inhibitor binds.....site.
   a. At active site b. Other than substrate
   c. At substrate d. Both A and C

18. In .....reaction the end product itself blocks the reaction.
   a. Enzyme catalyzed b Forward
   c. Feedback d. Reverse

19. Enzyme substrate reaction is intermediate at .....
   a. Initial state b. Final state
   c. Steady state d. Towards end

20. Lineweaver-Burk plot is also known as_____
   a. Double reciprocal plot b. Hanes-Woolf plot
   c. Eadie-Hofstee plot d. Steady-state equation

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PART-B : Descriptive

Time : 2 hrs. 40 min. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Derive Michaelis Menten equation. **10**

2. What are allosteric enzymes? Differentiate the reactions of competitive and non competitive enzyme catalysis. **2+8=10**

3. What is coenzyme? Compare the roles of vitamins as coenzyme. **4+6=10**

4. What do you mean by enzyme activity? Illustrate the ways in which enzyme assay is done. **3+7=10**

5. What do you mean by catalysis? Explain the nature of cofactors used in enzyme catalysis. **10**

6. Explain in detail the factors responsible for effecting enzyme activity **10**

7. Write a note on the industrial uses of enzymes taking into consideration any two examples **5+5=10**

8. Write a note on the concept of enzyme classification? **10**

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