REV-01
BBT/01/05

2024/07

SET A

B.Sc. BIOTECHNOLOGY
FOURTH SEMESTER [SPECIAL REPEAT]
ENZYMOLOGY
BBT-404

[USE OMR SHEET FOR OBJECTIVE PART]

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

(Objective)

Time: 30 mins. **Marks: 20**

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

1. The intrinsic protein present in the cell membrane mainly functions as:
   a. Enzyme b. Carrier
   c. Pores d. Channels
2. Which of the following enzyme inhibition shows decreased Km Value?
   a. Competitive inhibition b. Un competitive inhibition
   c. Non competitive inhibition d. Feedback inhibition
3. When the velocity of enzyme activity is plotted against substrate concentration, which of the following is obtained?
   a. Hyperbolic curve b. Parabola
   c. Straight line with positive slope d. Straight line with negative slope
4. The rate determining step of Michaelis-Menten Kinetics is:
   a. The complex dissociation step to produce products b. The complex formation step
   c. The product formation step d. None of the mentioned
5. The molecule which acts directly on an enzyme to lower its catalytic rate is:
   a. Repressor b. Inhibitor
   c. Modulator d. Regulator
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. Blocking of enzyme action by blocking its active site is called as:
   a. Allosteric inhibition b. Feedback inhibition
   c. Competitive inhibition d. Non-competitive inhibition
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. Hormone

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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Descriptive

Time : 2 hr. 30 mins. **Marks : 50**

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

1.	Write a note on the concept of enzyme classification.	10
2.	Write the role of cofactors in enzyme catalysis.	10
3.	What is coenzyme? Compare the roles of vitamins as coenzyme.	4+6=10
4.	What is activation energy? Explain the importance of activation energy by drawing a schematic diagram.	3+7=10
5.	How does an enzyme recognise a substrate? Write a note on the levels of recognition.	10
6.	Derive Michaelis Menten equation.	10
7.	Write a note on the industrial uses of enzymes taking into consideration any two examples.	5+5=10
8.	Explain in detail the factors responsible for effecting enzyme activity.	10

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