B.Sc. BIOTECHNOLOGY
FOURTH SEMESTER
ENZYMOLOGY
BBT-404
[USE OMR SHEET FOR OBJECTIVE PART]

SET
B

Duration: 3 hrs.
Full Marks: 70

(**Objective**)

Time: 30 mins.
Marks: 20

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

1. Which of the following enzyme inhibition shows decreased Km Value?
   a. Competitive inhibition
   b. Un competitive inhibition
   c. Non competitive inhibition
   d. Feedback inhibition

2. 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

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

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

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

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

7. 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

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

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

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

11. The intrinsic protein present in the cell membrane mainly functions as:
    a. Enzyme
    b. Carrier
    c. Pores
    d. Channels

12. 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

13. The molecule which acts directly on an enzyme to lower its catalytic rate is:
    a. Repressor
    b. Inhibitor
    c. Modulator
    d. Regulator

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

15. 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

16. Zymogen or proenzyme is a:
    a. Modulator
    b. Vitamin
    c. Enzyme precursor
    d. Hormone

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

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

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

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

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Time : 2 hr. 30 mins.   Marks : 50

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

1. Derive Michaelis Menten equation.   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. 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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