Avinashilingam Institute for Home Science and Higher Education for Women
[Deemed to be University] Coimbatore-641 043

Bachelor's Degree Examination – November 2018

III Semester

Class: II UG **Time : 3 hours**
Major: Biochemistry and Biotechnology **Max. Marks: 100**

15BBTC07 Enzymes and Enzyme Technology
Part A **(10 x 1= 10)**
Choose the correct answer

1. The first number in EC denotes ----------of the enzyme.
   a) Class b) Sub class c) Sub-Sub class d) Serial number of sub class

2. In ---------- inhibition V_{max} will decrease but K_m will remain the same.
   a) competitive b) uncompetitive c) Non-competitive d) Mixed

3. The amino acid whose pKa is close to neutral pH serving as both proton acceptor and donor is--------.
   a) Threonine b) Histidine c) Arginine d) Methionine

4. Lysozyme functions by attacking, hydrolyzing and breaking glycosidic bonds of -----
   a) peptidoglycans b) Polypeptides c) glycolipid d) glycoprotein

5. Accurate quantification of enzymes when one of the component is a gas is done using-------method
   a) Colorimetric b) titrimetric c)Spectrophotometric d) Manometric

6. The vitamin that functions as coenzyme is ---------
   a) Vitamin A b) Vitamin D c) Vitamin B d) Vitamin K

7. Induced fit hypothesis was proposed by---------
   a) Emil Fischer b) Daniel Koshland c) James B. Sumner d) Wendell M. Stanley

8. Zymogen is converted to an active enzyme by-------- enzyme
   a) Proteolytic b) Adenylated c) Phosphorylated d) Iso

9. Immobilized enzyme produced by---------- provides an extremely large surface area
   a) Cross linking b) Adsorption c) Microencapsulation d) Covalent bonding

10. Milk digestibility is improved by using----------
    a) Amylase b) Lactase c) Cellulase d) Invertase

Part B 5X6=30

Answer the following

Answer should not exceed 400 words or two pages

11.a. Give a note on the effect of pH on enzyme reaction.

(or)

11.b. Discuss on isoenzymes.

12.a. State the importance of proximity and orientation in enzyme catalysis.

(or)

12.b. Enumerate on electrostatic catalysis.

13.a. How are enzymes quantified using spectrophotometric method?

(or)

13.b. Explain about enzyme unit and katal.

14.a. Add a note on the specificity of enzymes?

(or)

14.b. Give a note on multiple cascade system.

15.a. Discuss on site directed mutagenesis and protein engineering.

(or)

15.b. Describe about the biocatalyst properties that are altered by protein engineering.

Part C 5x12=60

Answer the following

Answer should not exceed 800 words or four pages

16.a. Derive Michaelis menton equation. What is line weaver burke plot.

(or)

16.b. Explain about the three types of enzyme inhibition.

17.a. Explain about the mechanism of action of lysozyme.

(or)

17.b. Explain about the mechanism of action of chymotrypsin.

18.a. Discuss on titrimetric , manometric and enzyme coupled reactions for measuring enzymatic reactions.

(or)

18.b. Discuss on the role of metals in the function of enzymes with suitable examples.

19.a. Explain about the theories proposed for the reaction of enzyme and substrate.

(or)

19.b.Describe about feedback inhibition and reversible covalent modification of regulatory enzymes.

20.a. Discuss about the various methods and the significance of enzyme immobilization.

(or)

20.b. Give an account on the applications of enzymes in food processing and medical diagnosis.