Avinashilingam Institute of Home Science and Higher education for Women,
(Deemed to be University) Coimbatore -641043

Master's Degree Examinations- November 2018
III Semester

Class: II PG **Max Marks: 60**
Major: Biochemistry **Time: 3 Hours**

17MBCC17- Advanced Enzymology

Part A **10 x ½ =5**

Choose the correct answer

1.α- helices are stabilized by
(a) Non-ionic bond (b) Ionic bond (c) Carbon bond (d) Hydrogen bond

2. Which of the following pairs of amino acids might contribute to protein conformation by forming electrostatic interactions?
(a) Glycine and leucine. (b) Glutamate and lysine.
(c) Phenylalanine and tyrosine. (d) Lysine and arginine.

3. In enzyme kinetics Vmax reflects
(a) The amount of an active enzyme (b) Substrate concentration
(c) Half the substrate concentration (d) Enzyme substrate complex

4. In Lineweaver-Burk plot, the y-intercept represents
(a) Vmax (b) Km (c) 1/V masc (d) 1/Km

5. In competitive enzyme activity inhibition
(a) Apparent Km is decrease (b) Apparent Km is increased
(c) Vmax is increase (d) Vmax is decreased

6. All of the following are allosteric enzymes except
(a) Citrate synthetase (b) a-Ketoglutarate dehdrogenase

(c) Succinate thiokinase (d) Succinate dehydrogenase

7. An allosteric inhibitor of pyruvate dehydrogenase is
(a) Acetyl CoA (b) ATP (c) NADH (d) Pyruvate

8. Feedback inhibition of enzyme action is affected by
(a) Enzyme (b) Substrate (c) End products (d) None of these

9. The alpha-amylase is used to
a) Treat latex into foam rubber b) Make cheese
c) Convert starch to glucose in the food industry (d) None

10. Piezoelectric crystals is used in which type of biosensor ?
a) ampherometric biosensor b) Potentiometric biosensor
c) colorimetric biosensor d) Mass detecting immunosensors

Part B 5 x 4 = 20

Answer ALL questions

Each answer should not exceed 200 words or one page

11. a) How is the aminocaid sequence in primary structure of protein determined?

(Or)

11.b) Give a note on importance of Ramachandran plot.

12.a) Explain about the Nomenclature and Classification of enzymes.

(Or)

12.b) Derive MM Equation and mention about the reciprocal of MM Equation.

13.a) Describe the any one method to measure the enzyme turn over number with suitable example.

(Or)

13.b) Write a note on kinetics of competitive and Non-competitive enzyme inhibition.

14.a) Explain about the feedback enzyme inhibition mechanism.

(Or)

14.b) Brief an account on occurrence, isolation and properties of Multienzyme system.

15.a) Mention about three clinical properties of enzymes.

(Or)

15.b) Write a short note on fusion proteins containing enzymes and their applications.

Part C 5 x 7 = 35

Answer ALL questions

Each answer should not exceed 600 words or three pages

16. a) Elaborate an essay on the forces that determine the structure of proteins.

(Or)

16.b) Explain the tertiary and quaternary structure of proteins with suitable examples.

17.a) How can you identify active site aminoacids of an enzyme by site directed mutagenesis?

(Or)

17.b) Outline the various methods involved in isolation and purification of enzymes.

18.a) Describe the mechanism of action of Ribonuclease and Triose phosphate isomerase.

(Or)

18.b) Define Allosteric enzyme. How is the Aspartate transcarbomylase enzyme allosterically regulated by ATP and CTP?

19.a) Explain about the mechanism of reversible and Irreversible covalent modification of enzymes with suitable examples. (Or)

19.b) Discuss about the Mechanism of action , activators and inhibitors involved in regulation of Pyruvate dehydrogenase enzyme complex.

20.a) Describe the diagnostic value of enzymes such as LDH, CK, SGOT and SGPT. Why are enzymes also named as thrombolytic agents ? (Or).

20.b) Summarize the industrial applications of Enzymes.