

PC-11705/NH

BS/2111

ENZYMOLOGY – BHB-15

(Semester–III)

Time : Three Hours]

[Maximum Marks : 74

Note : The candidates are required to attempt *two* questions each from Section A & B. Section C will be compulsory.

SECTION–A

- I. (a) Describe the properties of enzyme catalysis. (6)
(b) Write a note on structure of enzymes. (5)
- II. What is K_m and V_{max} ? Derive Michaelis-Menten equation for enzyme kinetics. (11)
- III. Describe the mechanism of bimolecular reactions. (11)
- IV. (a) What is enzyme assay ? How can we study enzyme activity? (6)
(b) Write a note on chemical modification of active site residues of enzymes. (5)

SECTION-B

- V. Write a note on immobilized enzymes in food industry. (11)
- VI. How is primary structure of enzymes studied. What is the significance of studying primary structure of enzymes. (11)
- VII. Give a detailed account on Multienzymes and their role in cellular metabolism. (11)
- VIII. Describe engineering novel properties of enzymes. (11)

SECTION-C

(Compulsory Question)

- IX. (a) How are enzymes covalently modified?
- (b) Describe the role of signal transduction in modulating metabolic reactions.
- (c) What are ribozymes?
- (d) Describe the key regulation of glycolysis.
- (e) What are uncompetitive and non-competitive inhibitors?
- (f) What is feedback control?
- (g) Describe acid base catalysis.
- (h) How do enzymes lower activation energy of a reaction?

- (i) What are endothermic reactions?
 - (j) Describe the function of lyases and hydrolases.
 - (k) How are proteolytic enzymes synthesized in body?
What is the mechanism underlying their activation?
 - (l) How does pH affect the rate of enzyme-catalysed reactions?
 - (m) Which forces hold substrate at the active site of enzyme?
 - (n) How do metal ions regulate enzyme catalysis?
 - (o) What are Oligomeric enzymes? (2×15=30)
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