

2071
M.Sc. (Biotechnology) Second Semester
MBIO-204: Enzymology and Enzyme Technology

Time allowed: 3 Hours

Max. Marks: 80

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Explain the following:-

- a) Holozyme
- b) Active site
- c) Coenzyme and cofactors
- d) K_m and V_{max}
- e) Specific activity
- f) Irreversible enzyme inhibition
- g) Ribozymes
- h) Product inhibition

(8x2)

UNIT - I

II. Name major classes of enzymes along with example. Explain any three in detail
(4,12)

III. Write short note on the following:-

- a) Transition state theory
- b) Effect of substrate concentration on enzyme activity
- c) Flow chart for protein purification

(4,4,8)

UNIT - II

IV. Derive and explain the equation for Michaelis-Menten enzyme kinetics
(16)

V. Write short note on following:-

- a) Eadie-Hofstee equations
- b) Competitive inhibition
- c) Enzyme activity and Turnover number

(5,5,6)
P.T.O.

(2)

UNIT - III

VI. Explain the following:-

a) Role of metal ions in enzyme catalysis.

b) Mechanism of action of chymotrypsin

(2x8)

VII. a) Explain with example multienzyme complex

b) Define isozymes. Give their properties and applications

(2x8)

UNIT - IV

VIII. a) What are Allosteric enzymes? Give their properties.

b) Discuss MWC model for allosteric regulation of enzymes.

c) How extraction of membrane bound enzymes is carried out.

(5,7,4)

IX. Write short note on:-

a) Structure of Glyco proteins

b) Function of lipoproteins

c) Concept of biosensors and its applications.

(4,4,8)

x-x-x