

1059

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. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following:-

- a) Define Cofactor and Prosthetic group.
- b) What are Hydrolases?
- c) Define Catalytic Efficiency and Turnover Number.
- d) What is Activation energy?
- e) What are Multienzyme complexes?
- f) What is Specific activity and Purification fold?
- g) Define Ribozymes.
- h) Give international units for measurement of enzyme activity. (8x2)

UNIT – I

II. a) List factors affecting Solubility and activity of enzymes. Discuss.

b) Differentiate between Ligases and Lyases giving examples. (8,8)

III. a) Discuss Transition State theory of Catalysis.

b) Why and how are the Extraction methods different force types? Discuss in detail. (7,9)

UNIT – II

IV. a) State the assumptions used for Michaelis Menten rate equation and discuss the significance of K_m .

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b) What is Lineweaver Burk equation? Write its advantages and limitations in Kinetics. (8,8)

V. a) Discuss kinetics of Competitive and Non Competitive inhibition.

b) What is Induction time in Presteady State Kinetics? Discuss methods used to study Presteady state kinetics. (8,8)

(2)

UNIT - III

- VI. a) Discuss the mechanism of action of Lysozyme.
 b) Write notes on:
 a) Isozymes
 b) Catalytic antibodies (6,10)
- VII. a) Discuss Strain and Distortion theory of Enzyme specificity.
 b) Discuss mechanism of action of Zymogens. (8,8)

UNIT - IV

- VIII. a) What is Sigmoidal kinetics? Discuss the MWC model explaining allosteric behaviour.
 b) Write a note on Enzyme Biosensors. (10,6)
- IX. a) Discuss the Structure and Functions of Lipoproteins.
 b) How does membrane fluidity affect enzyme activity? (10,6)

x-x-x