Exam.Code:0436
Sub. Code: 3475

2072

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. Answer the following:-

a) Define Apoenzyme and Cofactor.
b) What are Catalytic antibodies?
c) Differentiate between Hydrolases and Transferases.
d) What is Product inhibition?
e) What are Isozymes? Give example.
f) What is Pre steady State Kinetics?
g) Define Activation energy.
h) Define Specific activity and turnover number. (8x2)

UNIT - I

II. a) Discuss factors affecting the rate of an enzyme catalysed reaction.
b) What are important characteristics of enzymes? (2x8)

III. a) Write a note on Activation energy and Enzyme catalysis.

b) Deliberate on Strain/Distortion and Transition State Stabilization Theory of Enzyme Specificity. (6,10)

UNIT - II

IV. a) What is Michaelis Menten equation? State the assumptions used and significance of Km.

b) Write the advantages and limitations of Line Weaver Burk Plot. (10,6)

V. a) What are different types of reversible enzyme Inhibitions? Illustrate and Discuss kinetics of Competitive and Un-Competitive Inhibition.

b) Write a note on Product inhibition. (10,6)

P.T.O.

UNIT - III

VI. a) Explain the mechanism of action of Chymotrypsin and Lysozymes.

b) What are Multienzyme complexes? Discuss their organization and importance with example. (2x8)

VII. Write a note on:-

a) Catalytic antibodies

b) Ribozymes (2x8)

UNIT - IV

VIII. a) What is Sigmoidal kinetics? Explain Substrate binding kinetics of Allosteric Enzymes and their regulation.

b) Write the principle, working and application of Enzyme based Biosensors. (10,6)

IX. a) Describe the structure and function of Lipoproteins.

b) What are Membrane Bound Enzymes? How does membrane Fluidity influence Enzyme activity? (2x8)

x-x-x