

Exam. Code : 107404

Subject Code : 1865

B.Sc. (Biotechnology) 4th Semester

ENZYMOLOGY

Paper : BT-8

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

Note :— Attempt ALL questions from this section.

Define the following in not more than 5 lines each :—

1. Ligases
2. Apoenzyme
3. Enzyme substrate complex
4. Transition state and activation energy
5. Zymogen
6. Induced fit hypothesis
7. RNA as enzyme
8. Define K_m value.

1×8=8

SECTION—B

Note :— Attempt any FIVE questions from this section.

1. Define cofactors and coenzymes with suitable examples.
2. Explain various prosthetic groups and give their role with examples.
3. Describe covalent catalysis and acid base catalysis.

4. Define active site. Explain how enzymes fit their specific substrate using the lock and key model and the induced fit model.
5. Differentiate between random and ordered sequential mechanism of ping pong reaction.
6. What is irreversible inhibition and define suicide inhibition.
7. Explain the effect of change in temperature and pH on the rate of an enzyme catalyzed reaction.
8. Derive Michaelis Menten equation. $4 \times 5 = 20$

SECTION—C

Note :— Attempt any **TWO** questions from this section.

1. Differentiate between the strain and distortion theory and Induced fit model.
2. What are the various classes of enzymes ? Explain with suitable examples.
3. Explain the effect of change in substrate concentration on the rate of enzyme catalyzed reaction and significance of substrate concentration in competitive inhibition.
4. Explain Simple sequential model and concerted/symmetry model for allosteric enzymes. $2 \times 6 = 12$