(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 1 7 9 8 4

Exam. Code : 0 0 3 7

B.Sc. (Hons.) Biotechnology 5th Semester

(2124)

ENZYMOLOGY

Paper : BIOT-504-T

Time Allowed : Three Hours] **[Maximum Marks : 67**

Note :— Attempt **five** questions in all. Q. No. **1** is compulsory. Attempt **one** question from each unit.

1. (a) What is the role of coenzymes in enzyme function ?

(b) Explain activation energy in enzyme action.

(c) Define the Michaelis-Menten constant (Km).

(d) What is meant by enzyme turnover number (Kcat) ?

(e) Explain the term specific activity of enzyme.

(f) Describe feedback inhibition.

(g) Briefly explain the significance of immobilized enzymes in industry.

(h) What is the role of thrombolytic enzymes in medicine ?

(i) What are isoenzymes ?

(j) What is meant by metal ion catalysis ? 1.5×10

UNIT—I

2. (a) Describe the structure and properties of enzymes with examples.

   (b) Explain the concept of the specificity of enzymes. 7,6

3. (a) Discuss the lock and key and induced fit hypothesis of enzyme action.

   (b) Explain concept of active site and transition state hypotheses. 5,8

UNIT—II

4. (a) Explain the effect of pH on enzyme activity.

   (b) Derive the Michaelis-Menten equation for enzyme kinetics. 5,8

5. (a) What is enzyme inhibition and how does it affect enzyme activity ?

   (b) Differentiate reversible and irreversible enzyme inhibition with example.

   (c) Explain the effect of temperature on enzyme activity. 4,4,5

UNIT—III

6. (a) Explain allosteric regulation of enzymes with examples.

   (b) Describe how enzymes are organized and localized within cells. 8,5

7. (a) What is acid-base catalysis, and how does it contribute to enzyme action ? Explain with example.

   (b) Explain the concept and significance of Multienzyme complexes. 8,5

UNIT—IV

8. (a) Explain two methods of enzyme immobilization and their advantages.

   (b) Explain the role of proteolytic enzymes in meat and leather industry. 8,5

9. Write short notes on the following :

   (a) Metal degrading enzymes.

   (b) Thermophilic enzymes.

   (c) Application of lipases. 5,4,4