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

(ii) **Questions   : 9**   **Sub. Code :** | 2 | 5 | 9 | 4 | 3 |

Exam. Code : | 0 | 4 | 3 | 6 |

M.Sc. Bio-Technology 2ⁿᵈ Semester
(2055)
ENZYMOLOGY AND ENZYME TECHNOLOGY
Paper–MBIO-203

Time Allowed : Three Hours]   **[Maximum Marks : 80**

Note :— Attempt **FIVE** questions in all. Q. No. **1** is compulsory.
        Attempt **ONE** question from each unit. All questions carry
        equal marks.

1. (a) Define with example the concept of enzyme turnover number.

    (b) What is meant by active site of enzyme ?

    (c) Explain competitive inhibition.

    (d) Define allosteric interactions with an example.

    (e) What are isoenzymes ?

    (f) How metal ions play role in enzyme catalysis ?

    (g) Give applications of biosensors.

    (h) What are glycoproteins ?   2×8

UNIT—I

2. (a) Describe the characteristics of enzymes and their role in catalysis.   8

    (b) Explain enzyme classification and nomenclature with examples.   8

3. (a) Explain how pH and temperature effect the enzyme activity.   8

    (b) Explain with flow chart the extraction and purification of enzyme from microorganism.   8

UNIT—II

4. (a) Derive Michaelis-Menten equation and its significance in enzyme kinetics.   8

    (b) Discuss the Lineweaver-Burk plot and its importance. 8

5. Write short notes on following :

    (a) Reversible and Irreversible enzyme inhibition.   5

    (b) Non-Competitive inhibition.   5

    (c) Hanes-Woolf equation.   6

UNIT—III

6. Discuss acid-base and covalent catalysis with suitable examples.   16

7. (a) Describe the mechanism of enzyme action in DNA Polymerase.   6

    (b) Explain zymogen with example.   4

    (c) Explain multi-enzyme complex with example.   6

UNIT—IV

8. (a) Describe the methods used for the extraction of membrane-bound enzymes. 8

   (b) Explain the impact of membrane fluidity on enzyme activity. 8

9. What is enzyme immobilization ? Describe different methods of immobilization and their applications. 16