

Roll No.

--	--	--	--	--	--	--	--	--	--

## M. Tech. (Biotechnology)

SECOND SEMESTER EXAMINATION, 2010-11

### ENZYME ENGINEERING

Time : **3 Hours**

Total Marks : **100**

**Note :** (i) Attempt any **Five** questions.  
(ii) Marks are indicated against each question.

1. (a) Give a detailed account of medical applications of enzymes. **10**  
(b) Derive Michaelis-Menten equation and discuss the factors affecting rate of enzyme catalyzed reactions. **10**
2. (a) Define enzyme kinetics. Derive the rate of a reaction using Briggs-Haldane steady state approach. **10**  
(b) Draw the Lineweaver Burk Plot for the different types of enzyme inhibition and also compare these inhibitions with respect to their  $K_m$  and  $V_{max}$  values. **10**
3. (a) What do you understand by the immobilization of enzymes? Discuss the kinetics of immobilized enzymes. **10**  
(b) Write a note on : **10**
  - (i) Glucose oxidase
  - (ii) Lysozyme
4. (a) Write short notes on enzyme reactors. **10**  
(b) Compare the kinetics of different enzyme reactors. **10**

**MTBT-204**

5. (a) Discuss in brief how immobilization has a direct effect on enzyme constrain. **10**
- (b) Write short notes on the enzyme reactions in organic media. **10**
6. Write short notes on any **Two** of the following : **10 x 2 = 20**
- (a) Intermolecular cross linking
  - (b) Gel entrapment
  - (c) Parameters of enzyme immobilization
  - (d) Heterogeneous kinetics
7. Write short notes on any **Four** of the following: **5 x 4 = 20**
- (a) Industrial uses of enzymes
  - (b) Factors effecting enzyme kinetics
  - (c) Abzymes and their uses
  - (d) Design of enzyme reactor
  - (e) Analytical scopes of enzymes

