

Register Number:

B.TECH. DEGREE EXAMINATIONS: NOV/DEC 2012

Fifth Semester

BIOTECHNOLOGY

BTY113: Enzyme Technology

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. Most of the Vitamin B complex act as a
 - a) Cofactor
 - b) Coenzyme
 - c) Prosthetic groups
 - d) Apoenzyme
2. Turn over number of enzyme is dependent upon
 - a) Size of Enzyme
 - b) Molecular weight of Enzyme
 - c) Active sites
 - d) Concentration of substrate
3. Given an enzyme with a $K_m = 10\text{m M}$ and $V_{\max} = 100\text{ m mol/min}$. If $[S] = 100\text{ m M}$, which of the following will be true?
 - a) A 10 fold increase in V_{\max} would increase velocity 10 fold
 - b) A 10 fold decrease in K_m would increase velocity
 - c) Both (a) and (b)
 - d) A 10 fold increase in V_{\max} would decrease velocity 20 fold
4. An allosteric enzyme
 - a) usually contains a single polypeptide chain.
 - b) may show a sigmoid dependence on substrate concentration.
 - c) is not subject to regulation of its activity.
 - d) often catalyzes a reaction near the end of a pathway.
5. During the enzymatic reaction of an immobilized enzyme, the rate of substrate transfer is
 - a) is nothing to do with the substrate consumption
 - b) more than that of substrate consumption
 - c) lesser than that of substrate consumption
 - d) equal to that of substrate consumption
6. The immobilized enzyme produced by micro encapsulation technique provides
 - a) an extremely large surface area
 - b) smaller surface area
 - c) high amount of solvent
 - d) relatively smaller surface area

22. a) Derive the Michaelis Menten equation for single substrate kinetics.

(OR)

b) Explain different types of Enzyme inhibitions with examples.

23. a) Explain the different cross-linking & covalent binding methods to prepare enzyme immobilization.

(OR)

b) What are the advantages and disadvantages of enzyme immobilization?

24. a) Explain the principle and procedure involved in affinity chromatography.

(OR)

b) Explain the principle & procedure involved in gel-filtration chromatography.

25. a) What are immunosensors? Explain the applications of immunosensors.

(OR)

b) Explain the applications of biosensor in food industries.
