

**II B.Tech II Semester Supplementary Examinations, Nov/Dec 2005**  
**ENZYME ENGINEERING AND TECHNOLOGY**  
**(Bio-Technology)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. Write about the application of enzymes in food industries. [16]
2. Describe the procedures of enzyme isolation from natural sources. [16]
3. Give an account of architecture and salient features of active site of an enzyme. [16]
4. Discuss about the Eadie-Hofstee and Hanes plot and state their edge over the LB plot. [16]
5. What are substrate and product inhibition? Explain. [16]
6. Discuss the important criteria and prerequisite for selecting support for enzyme immobilization. [16]
7. Discuss the design and application of packed bed reactors. [16]
8. Write the application of enzyme electrodes as biosensor in various industries. [16]

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1. State the importance of enzymes in medical diagnosis. [16]
2. How enzymes are preliminarily purified from a crude enzyme extract? [16]
3. Discuss different types of enzyme specificity with suitable examples. [16]
4. Discuss the kinetics for reversible reactions. [16]
5. What are substrate and product inhibition? Explain. [16]
6. Compare and contrast the characteristics of different methods of enzyme immobilization. [16]
7. Define and explain intraparticle diffusion and reaction. [16]
8. Discuss the design of enzyme electrodes. [16]

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1. Discuss in detail about the analytical application of enzymes. [16]
2. Describe the procedures of enzyme isolation from natural sources. [16]
3. Discuss why the lock & key model could lead to an inefficient enzyme mechanism and induced fit model to an efficient enzyme mechanism. [16]
4. Write the significance of MM equation. [16]
5. Discuss allosteric enzymes in terms of cooperativity. [16]
6. Discuss the important criteria and prerequisite for selecting support for enzyme immobilization. [16]
7. Give an account of fluidized bed reactor. State its important applications. [16]
8. Write the application of enzyme electrodes as biosensor in various industries. [16]

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1. Discuss enzyme classification in terms of four-digit classification number? [16]
2. What are the analytical techniques employed for obtaining highly purified enzyme preparation. [16]
3. Give an account of architecture and salient features of active site of an enzyme. [16]
4. Derive Michaelis-Menten equation. State the importance of MM constant. [16]
5. How MWC model accounts for cooperativity and explain allosteric regulation. [16]
6. Discuss about the interactions and carriers used for enzyme immobilization by adsorption. [16]
7. Give an account of different types of immobilized enzyme reactors. [16]
8. Enumerate the application of enzymes in analysis. [16]

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