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Total No. of Pages : 02

Total No. of Questions : 18

**B.Tech.(Biotechnology) (2012 Onwards) (Sem.-6)****ENZYMOLGY AND ENZYME TECHNOLOGY**

Subject Code : BTBT-603

M.Code : 71074

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

**SECTION-A****Answer the following questions briefly :**

1. What is the difference between specific activity and turn over number of an enzyme?
2. What is the difference between biological catalyst and chemical catalyst?
3. Explain the difference between biocatalysis and biotransformation by giving suitable examples.
4. What are allosteric enzymes?
5. Define Isoenzymes. Give two examples.
6. What is PEGylation and why is it carried out? Give relevant examples.
7. What is competitive enzyme inhibition?
8. What is the importance for  $K_m$  and  $V_{max}$  values?
9. What is the need of a double reciprocal plot?
10. Differentiate between coenzymes and cofactors with examples.

**SECTION-B**

11. Although trypsin, chymotrypsin and elastase, all are serine proteases how do they have different specificity for protease action?
12. Write short notes (approx. 500-600 words) on **any one** of the following :
  - a) Competitive Inhibition
  - b) Enzyme Inhibitors
  - c) Lineweaver- Burke Plot and its importance
13. Give an account of application of enzymes in medicine and therapeutics.
14. Discuss the role of crystallization in the process of enzyme purification at industrial scale .
15. Give the merits and demerits of enzyme immobilization.

**SECTION-C**

16. Explain the Ping-Pong and Ternary Complex mechanisms of multi-substrate enzyme reactions. Give suitable example of each mechanism.
17. Entrapment is yet another process of enzyme immobilization. What kinds of matrices are used for the entrapment of the biocatalyst? Which is the best matrix for enzyme entrapment for industrial applications?
18. What are technical enzymes? Briefly discuss the role of proteases in the detergent industry.

**NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.**