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Total No. of Pages : 02

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M.Tech(Bio Tech) EL-I (2018 Batch) (Sem.–1)

INDUSTRIAL ENZYME TECHNOLOGY

Subject Code : MTBT-107-18

M.Code : 75767

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. Give an account of application of enzymes in medicine /therapeutics and diagnostics. (12)

2. What do you understand by enzyme immobilization? Discuss the different methods of enzyme immobilization by giving suitable example of each. (2 + 10)

3. In IMES (Immobilized Enzyme Systems) the catalysis occurs in a heterogeneous mode as compared to the traditional enzyme where both enzyme and the substrate are in same phase i.e liquid. This has an effect on the efficacy of the enzyme which ultimately affects the whole process.

   Briefly discuss the role of following parameters on the efficacy of biocatalysis by IMES.

   (a) diffusion (02)

   (b) partition (02)

   (c) particle size of the carrier (02)

   (d) substrate size (02)

   (e) temperature and (02)

   (f) linear velocity of substrate (02)

4. Write short notes on **any two** (500-600 words approx.)

   (a) Entrapment (06)

   (b) Technical Enzymes (06)

   (c) Application of enzymes in food and feed industry. (06)

   (d) Competitive Inhibition (06)

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5. Explain the Ping-Pong and Ternary Complex mechanisms of multi-substrate enzyme reactions. Give suitable example of each mechanism. (12)

6. (a) Enzymes are designated by EC numbers in metabolic pathways. 4 integers are associated with an enzyme number viz. EC nl.n2.n3.n4. What does the integer nl to n4 indicate about the enzyme? Explain giving a suitable example. (06)

   (b) Briefly discuss the applications of transglutaminases in the food industry. (06)

7. (a) Explain Biocatalysis and Biotransformation by giving suitable examples. (06)

   (b) What are the advantages and disadvantages of enzyme immobilization? (06)

8. (a) What is Biopolishing? Which enzymes are used in this process? Give examples of microbes which produce this enzyme. (06)

   (b) What is Damkohler's number? Give its significance. (06)

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NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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