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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Four Semester

BT16404 – ENZYME TECHNOLOGY AND BIOTRANSFORMATION*(Biotechnology)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**

Answer ALL questions

PART A - (10 X 2 = 20 Marks)

	CO	RBT
1. Illustrate the difference between monomeric and oligomeric enzymes.	1	AN
2. What is the role of entropy in catalysis?	1	AN
3. Mention the differences between simple enzymes and allosteric enzymes.	1	AN
4. Differentiate the sequential and ping-pong bi substrate enzyme reactions with an example.	1	AN
5. Mention the role of enzymes in forensic science.	2	AN
6. List the disadvantages of entrapment technique used for enzyme immobilization.	2	AN
7. Write any four commercially important enzymes and their sources.	2	U
8. Mention any two methods available to protect the target enzymes from protease attack during extraction from crude source.	2	AN
9. Define abzymes. Give an example.	3	U
10. What is Baeyer-Villiger oxidation?	3	U

PART B - (5 X16 = 80 Marks)

11. (a) Write detail notes on specificity of enzymes and enzyme – substrate complex formation. (16) 1 U

(OR)

- (b) How will you classify enzymes? What is the enzyme commission nomenclature for enzymes? (16) 1 U

12. (a) Derive Michaelis – Menten equation for single substrate enzyme catalyzed reaction. How are Michaelis – Menten parameters estimated? **(16)** **1** **AN**

(OR)

- (b) Derive the equation of Monod-Wyman-Changeux model in detail. **(16)** **1** **AN**

13. (a) How will you design the enzyme electrodes? Explain the enzyme biosensors in environmental applications. **(16)** **2** **AN**

(OR)

- (b) Explain the Cross linking and Covalent binding methods of immobilization. **(16)** **2** **AN**

14. (a) Explain the different types of enzyme assay with example. Mention their major advantages and disadvantages. **(16)** **2** **AN**

(OR)

- (b) Describe the process involved in the extraction and purification of membrane bound enzymes. **(16)** **2** **AN**

15. (a) Describe about the artificial enzymes and their merits and demerits compared to classical enzymes. **(16)** **3** **AN**

(OR)

- (b) (i) Discuss the different dehydrogenases used and their substrate specificity. **(8)** **3** **AN**

- (ii) Explain the steps involved in use of enzymes in peptide synthesis in detail. **(8)** **3** **AN**