Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2017**

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|  |  |  |  |
| **Code :** | **14BT2016** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ENZYME ENGINEERING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the chemical nature of enzymes? | CO1 | 5 |
| b. | Discuss in detail about the general properties of enzymes? | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | Write note on the Lock and Key model of substrate binding with enzyme? | CO1 | 6 |
| b. | Describe the Induced fit hypothesis of substrate binding with enzyme. | CO1 | 6 |
|  | c. | Outline a note on Classification of enzymes. | CO1 | 8 |
|  |  |  |  |  |
| 3. |  | Discuss the estimation of MM parameters ?  i. Line weaver Burke Plot. ii. Eadie Hofstee Plot. iii. Hanes Plot. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Explain the expression for Substrate Inhibition models for enzymes. | CO2 | 20 |
|  |  |  |  |  |
| 5. |  | Write on the different chromatographic techniques used in the purification of enzymes. | CO2 | 20 |
| (OR) | | | | |
| 6. | a. | How is ammonium sulphate used in purification of enzymes? | CO2 | 10 |
|  | b. | Illustrate the features of the extraction medium used for enzyme separation? | CO2 | 10 |
|  |  |  |  |  |
| 7. |  | Describe in detail about the applications of immobilized enzymes? | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Describe the Physical and Chemical techniques used in immobilization of enzymes? | CO1 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Describe the principle and design of Amperometric biosensors? | CO2 | 14 |
|  | b. | Discuss about the application of enzymes in food industry. | CO3 | 6 |

ALL THE BEST