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 – April / May – 2017**

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

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

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Discuss in detail about the general properties of enzymes. | CO1 | 15 |
| b. | Illustrate the chemical nature of enzymes. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Describe the Lock & Kay model of substrate binding with enzyme. | CO1 | 7 |
| b. | Describe the Induced fit hypothesis of substrate binding with enzyme. | CO1 | 7 |
| c. | Describe the Transition state stabilization theory of substrate binding with enzyme. | CO1 | 6 |
| 3. |  | Describe about LB plot and EH plots in detail. | CO2 | 20 |
| (OR) | | | | |
| 4. |  | Discuss about the reversible competitive and non-competitive enzyme inhibition in detail. | CO2 | 20 |
| 5. | a. | Describe in detail 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 |
| (OR) | | | | |
| 6. |  | How is the molecular size of the enzyme determined using gel filtration chromatography? | CO2 | 20 |
| 7. |  | Describe the Entrapment and Encapsulation techniques used in immobilization of enzymes. | CO1 | 20 |
| (OR) | | | | |
| 8. |  | Describe in detail about the applications of immobilized enzymes. | CO2 | 20 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the principle and design of Amperometric biosensors. | CO2 | 14 |
|  | b. | Discuss about a suitable biosensor that can detect the bacterial contamination in meat items. | CO3 | 6 |