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

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**End Semester Examination – Nov/Dec– 2018**

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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 on the nomenclature and classification of enzymes. | CO1 | 15 |
| b. | Comment on intracellular and extracellular enzymes. | CO1 | 5 |
| (OR) | | | |  |
| 2. | a. | Explain in detail on mechanism of enzyme action. | CO1 | 12 |
| b. | Write a note on specificity of enzyme action. | CO1 | 8 |
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| 3. | a. | Write in detail on kinetics of single substrate reactions. | CO2 | 10 |
| b. | Discuss about multi-substrate reactions. | CO2 | 10 |
| (OR) | | | |  |
| 4. | a. | What are the different types of inhibitors of enzymes? | CO2 | 10 |
| b. | Explain competitive and non-competitive inhibition with examples. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Give a detailed account on enzymes purification methods. | CO3 | 15 |
| b. | Comment on membrane bound enzymes. | CO3 | 5 |
| (OR) | | | |  |
| 6. | a. | Write a note on soluble enzyme extraction methods. | CO3 | 10 |
| b. | Describe about sub-cellular enzyme assays | CO3 | 10 |
|  |  |  |  |  |
| 7. | a. | Defineimmobilization. | CO4 | 2 |
| b. | What is the need of enzyme immobilization? | CO4 | 10 |
| c. | List out the applications of immobilized enzymes. | CO4 | 8 |
| (OR) | | | |  |
| 8. | a. | How do enzymes are immobilized? | CO4 | 5 |
| b. | Explain in detail on Physical and chemical techniques of immobilization. | CO4 | 15 |
|  |  |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Discuss in detail on the following sensors   1. Calorimetric sensors . 2. Optical biosensors. 3. Immunosensors. | CO5 | 6+7+7 |