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 :** | **14BT3001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **APPLIED BIOCHEMISTRY** | **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. | Explain the distinctive functions of glycoproteins, proteoglycans and glycolpids with suitable examples. | CO1 | 15 |
| b. | What are therapeutic glycans? | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Discuss the mechanism of Lectin mediated ovum fertilization and intracellular protein sorting. | CO1 | 10 |
| b. | Carbohydrates serve as informational molecules or the sugar code. Bring out the reasons to explain the above statement. | CO1 | 10 |
| 3. | a. | Compare N and O linked glycans in terms of their structure and function. | CO1 | 10 |
|  | b. | Consider the potential roles of selectins and selectin ligands in inflammation, cancer and metastasis. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Based on glycan composition, propose a function for the antigenic determinant observed in the ABO blood group system. | CO1 | 10 |
|  | b. | Elaborate on the role of glycans in biotechnology and pharmaceutical industries. | CO1 | 10 |
| 5. | a. | Explain how the structure of Myoglobin and Hemoglobin help in oxygen binding and diffusion. | CO2 | 16 |
|  | b. | List few molecular markers of prognostic significance in hepatocellular carcinoma. | CO2 | 4 |
| (OR) | | | | |
| 6. | a. | Highlight the structural features of muscular (motor) proteins. | CO2 | 10 |
|  | b. | How do amniocentesis and biopsy techniques aid in disease diagnosis? | CO2 | 8 |
|  | c. | Differentiate Glycation and Glycosylation. | CO1 | 2 |
| 7. | a. | Discuss the various defensive actions of antioxidants against free radicals induced oxidative damage. | CO2 | 16 |
|  | b. | Hypothesize the relationship between free radicals and aging. | CO2 | 4 |
| (OR) | | | | |
| 8. | a. | How are free radicals generated from cellular sources? Highlight the biological implications of ROS. | CO2 | 16 |
|  | b. | Comment on the applications of Hormone therapy. | CO2 | 4 |
|  | | **Compulsory**: |  |  |
| 9. | a. | With specific examples, illustrate the mechanism of actions of hormones that bind intracellular receptors. | CO2 | 10 |
|  | b | How are hormones classified based on the proximity of their action? | CO2 | 10 |