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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| **Sub. Code:** | **15BT3001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CELL BIOLOGY AND MOLECULAR SIGNALING** | **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. | Compare and contrast cytoskeletal elements. | CO1 | 12 |
| b. | Give a neat illustration of Mitochondria. Tabulate the functions. | CO1 | 8 |
| (OR) | | | | |
| 2. | a. | Illustrate the fluid mosaic model of plasma membrane. Highlight the functions of peripheral and integral proteins. | CO1 | 15 |
| b. | Colchine inhibits the cell division. Justify with suitable reasons. | CO1 | 5 |
| 3. | a. | Detail the functions and properties of macromolecules that are abundant in the extracellular matrix of tissues. | CO1 | 10 |
|  | b. | Summarize the mechanism of receptor mediated endocytosis. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Tabulate the differences between uniport and symport. Give examples. | CO1 | 10 |
|  | b. | With a suitable example, analyze the significance of P class pump. | CO1 | 10 |
| 5. | a. | Comment on different types of cell signaling. Explain the mechanism of signaling by Steroid receptors. | CO2 | 10 |
|  | b. | Draw the structure of cAMP. As a second messenger, how does it mediate signal transduction. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Differntiate endo and exo toxin. How do they gain entry into the cells? | CO1 | 10 |
|  | b. | How does the cells interact with other cells and supporting matrix? Name the proteins associated with cell junctions. | CO1 | 10 |
| 7. | a. | Summarize the features of Receptor Tyrosine Kinases (RTK). | CO1 | 10 |
|  | b. | Ion pumps play a major role in propagation of action potential. How this is achieved? | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Illustrate the process of ribosome assembly in nucleolus. | CO1 | 10 |
|  | b. | What is the mode of action of imatinib? How do some tumors develop resistance to this drug. | CO2 | 10 |
|  | | **Compulsory:** |  |  |
| 9. | a. | With a neat diagram, explain the phases and features of cell cycle. Emphasize the functions of molecules that control cell cycle. | CO2 | 12 |
|  | b. | How can a proto oncognee be converted to an oncogene without a mutation in its coding sequence? Explain two ways by which this can occur. | CO2 | 8 |

ALL THE BEST