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



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14BT2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CELL BIOLOGY** | **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. | What are lysosomes? Write its ultimate fate of digestive vacuole. | CO1 | 6 |
| b. | Explain the structure and various functions of endoplasmic reticulum. | CO1 | 7 |
| c. | Draw a neat sketch of Mitochondria. Highlight the role of Mitochondria in oxidative phosphorylation. | CO1 | 7 |
| **(OR)** | | | | |
| 2. | a. | Explain the different phases of cell cycle. Add a note on the molecules that regulate cell cycle. | CO1 | 15 |
|  |  | Categorize the role of proteins in the organization of plasma membrane. | CO1 | 5 |
| 3. | a. | With a neat diagram, discuss the significance of Na+ K+ ATPase in maintaining the osmotic balance of the cell. | CO3 | 10 |
| b. | Write a note on: Symport and Antiport. | CO2 | 5 |
| c. | Define endocytosis. Write its major types and functions. | CO2 | 5 |
| **(OR)** | | | | |
| 4. | a. | Define cell - cell communication. Tabulate the functions of cell adhesion molecules and cell junctions. | CO3 | 8 |
| b. | Classify three types of protein filaments that make up the cytoskeleton. Explain their functions in the order of increasing diameter. | CO3 | 12 |
| 5. | a. | Define action potential. With a neat illustration, explain the process of nerve impulse transmission in neurons. | CO2 | 20 |
| **(OR)** | | | | |
| 6. | a. | Comment on passive transport. Describe in detail how the small and large molecules are transported through plasma membrane. | CO2 | 20 |
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| 7. | a. | Explain the composition of extracellular matrix. Highlight its importance. | CO3 | 12 |
| b. | Highlight the role of muscle Ca2+ ATPase. | CO3 | 8 |
| **(OR)** | | | | |
| 8. | a. | Classify cell signaling molecules. Explain the endocrine signaling molecule with neat sketch. | CO4 | 15 |
| b. | Discuss the types of cell surface receptors. | CO4 | 5 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Illustrate with neat sketch, G-protein activates cAMP dependent protein kinase. | CO4 | 10 |
| b. | Substantiate the role of cAMP as second messenger with suitable explanation. | CO4 | 10 |