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 :** | **15BT2003** | **Duration :** | **3hrs** |
| **Sub. Name :** | **HUMAN PHYSIOLOGY AND ANATOMY** | **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. | Draw the structure of an animal cell and explain in brief the function of each component. | CO1 | 10 |
| b. | Define action potential. Write a detailed note on the mechanism of action potential giving suitable diagrams. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain the various transport mechanisms operating across the cell membrane. | CO2 | 10 |
| b. | Write a note on the origin of cell membrane potential. Explain the mathematical descriptors of membrane potential. | CO1 | 10 |
| 3. | a. | Give the composition of blood. Add a note on the functions of erythrocytes. | CO2 | 10 |
|  | b. | What are the major systems for classification of blood groups? Add a brief note on the importance of blood groups. | CO3 | 10 |
| (OR) | | | | |
| 4. | a. | List out the types of leucocytes. Add a detailed note on the structure and function of leucocytes. | CO2 | 10 |
|  | b. | List out and explain the factors responsible for regulation of blood flow. | CO1 | 10 |
| 5. | a. | Draw a neat and labelled diagram of a nephron and describe the process of urine formation. | CO2 | 10 |
|  | b. | Give a detailed account on the mechanism of oxygen and carbondioxide transport inside the human body. | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Explain the structure of human kidney with a neat and labelled diagram. State the purpose, benefits and risks of dialysis. | CO1 | 10 |
|  | b. | Describe the components of a respiratory system. Explain the process of acid-base regulation of respiratory gases. | CO2 | 10 |
| 7. | a. | Illustrate the process of synaptic conduction of nerve impulses. | CO2 | 4 |
|  | b. | Define EEG. Explain the purpose and procedure of EEG. | CO3 | 4 |
|  | c. | Explain the structure and working of a human ear. | CO3 | 12 |
| (OR) | | | | |
| 8. | a. | Describe the cortical localization of a human brain. | CO1 | 4 |
|  | b. | What are spinal reflexes? Describe the types and importance of spinal reflexes. | CO2 | 4 |
|  | c. | Explain the structure and working of a human eye. | CO3 | 12 |
|  | | **Compulsory:** | CO1 |  |
| 9. | a. | Give a detailed account on the use of medical devices for treating cardiac arrhythmias. | CO2 | 6 |
|  | b. | Define cardiac cycle. Explain the phases of a cardiac cycle using suitable diagrams. | CO2 | 7 |
|  | c. | How can you determine the electrical activity of a human heart? Explain its importance in the field of medical diagnosis. | CO3 | 7 |