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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

May 2023 Semester End Main Examinations

Programme: B.E.

Branch: Medical Electronics Engineering

Course Code: 22MD3ESHAP

Course: Human Anatomy and Physiology

Semester: III

Duration: 3 hrs.

Max Marks: 100

Date: 17.05.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

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|---|-------------------------------------------------------------------------------------------------------------------|----|
| 1 | a) What are the general characteristics of cell? Also explain the cell composition. | 10 |
| | b) What are the components of cell homeostatic system? Also explain the mechanism of action of homeostatic system | 10 |

UNIT - II

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|---|-----------------------------------------------------------------------------------|----|
| 2 | a) With a neat diagram explain the structure and the function of the human heart. | 10 |
| | b) Explain the electrical activity of heart and hence the generation of ECG wave. | 10 |

UNIT - III

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|---|---------------------------------------------------------------------------------------------|----|
| 3 | a) With a neat diagram, explain the physiological function of human respiratory tract. | 10 |
| | b) Mention the factors influencing in regulation of pulmonary blood flow. | 04 |
| | c) Name and explain the different lung volumes appeared during the pulmonary function test. | 06 |

UNIT - IV

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|---|------------------------------------------------------------------------------------|----|
| 4 | a) Compare and explain the features of skeletal, cardiac and smooth muscle fibres. | 12 |
| | b) Explain the microscopic structure of myofibril and skeletal muscle | 08 |

OR

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|---|-----------------------------------------------------------------------------|----|
| 5 | a) Explain how nervous system is organised in human body. | 08 |
| | b) Explain the structure of neuron. Also explain the neuron classification. | 12 |

UNIT - V

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|---|---------------------------------------------------------------------------|----|
| 6 | a) Explain the structure and functions of the kidney. | 10 |
| | b) With neat diagram, explain the structure of nephron and its importance | 10 |

OR

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|---|--------------------------------------------------------------------------|----|
| 7 | a) Explain the classification of hormones based on the chemical nature. | 07 |
| | b) Explain the hormones secreted by pituitary gland. | 06 |
| | c) With a neat sketch, describe thyroid gland and the hormones secreted. | 07 |

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.