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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

- 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

- 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

- 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

- 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

- 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

- 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

- 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.