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Question Paper Code: 93B02

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Third Semester

Biomedical Engineering

19UBM302- HUMAN ANATOMY AND PHYSIOLOGY

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1. Calculate the Nernst potential for potassium ion at normal body temperature of 98.6°F. The in and out concentration given is 200 and 20 respectively CO2- App
2. Distinguish cytokinesis from karyokinesis. CO2- App
3. Give the Anatomical description of bronchial artery CO1- U
4. Compare physiological shunt with Physiological Dead Space CO2- App
5. Give the number of Segments of spinal cord and spinal nerves CO3- Ana
6. Cutaneous reflexes- what is it? CO3- Ana
7. The renal plasma flow rate of a kidney is 6 times higher than that of glomerular filtration rate which is 135 mL/min. calculate its filtration fraction. CO2- App
8. How will you collect tubular fluid by the stop flow techniques to for analysis? Explain any one. CO2- App
9. Give two examples for ball and socket joint. CO1- U
10. Write any two characteristic features of skeletal muscle CO1- U

PART – B (5 x 16= 80Marks)

11. (a) Explain in your words the negative feedback mechanism involved in the maintenance of water balance. CO2- App (16)
Or
(b) Describe the events taking place during M phase of a cell cycle with neat diagram. CO2- App (16)

12. (a) Discuss with a graphical representation the intra-ventricular pressure changes during cardiac cycle. CO3-Ana (16)
- Or
- (b) Discuss the factors by which the pulmonary circulation is regulated and List out the characteristic features of Pulmonary blood vessels CO3-Ana (16)
13. (a) Describe the functions of various vital centers located in medulla oblongata. CO1-U (16)
- Or
- (b) What is reflex activity? Describe the components of the anatomical nervous pathway for are flex action. CO1-U (16)
14. (a) Describe the movements of the stomach and Explain in detail the evacuation of gases from gastro intestinal tract CO1-U (16)
- Or
- (b) Explain the process of secretion of H⁺ ions by renal tubules in the maintenance of acid-base balance CO1-U (16)
15. (a) Give notes on physiology of the following parts of a human eye CO3- Ana (16)
(a) eye lids (b) cornea
- Or
- (b) How will you distinguish cartilage from bones? Explain the types of cartilag CO3- Ana (16)