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**Reg. No. :**

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**Question Paper Code: 53B02**

B.E./B.Tech. DEGREE EXAMINATION, MAY 2018

Third Semester

Biomedical Engineering

15UBM 302 -HUMAN ANATOMY AND PHYSIOLOGY

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

Answer All Questions

1. Which one of the following organelles digests the old organelles that are no longer useful to the cells? CO1- R  
(a) Ribosomes                      (b) Mitochondria                      (c) Golgi apparatus                      (d) Lysosomes
2. \_\_\_\_\_ does not use the cell's energy in bringing materials in & out of the cell. CO1- R  
(a) Active                      (b) Membrane                      (c) Passive                      (d) Cell
3. \_\_\_\_\_ volume in the lungs at maximal inflation. CO2- R  
(a) Tidal volume                      (b) Total lung capacity  
(c) Expiratory volume                      (d) Inspiratory volume.
4. \_\_\_\_\_ carry deoxygenated blood, towards the heart except pulmonary veins. CO2- R  
(a) Artery                      (b) veins  
(c) capillaries                      (d) both a and b
5. What part of the nervous system does the skull protect? CO3- R  
(a) Dendrites                      (b) Neurotransmitter                      (c) Axon                      (d) Nucleus

6. What is the name given to a rapid response to a stimulus by one or more organs? CO3- R
- (a) Reflex action (b) Action in response  
 (c) Stimulus (d) None of the above.
7. Each bolus passes from the esophagus into the stomach through the \_\_\_\_\_ CO4- R
- (a) Pylorus (b) Fundus (c) Cardiac sphincter (d) Duodenum
8. Involuntary squeezing action of the muscles in digestive system causing food to move through CO4- R
- (a) Mechanical digestion (b) Chemical digestion  
 (c) Peristalsis (d) Indigestion
9. Type of joint found at the Elbow and Knee CO5- R
- (a) Hinge Joint (b) Pivot joint (c) Moveable joint (d) Ball-and-socket joint
10. What structure is attached to the lens causing its shape to change? CO5- R
- (a) Aqueous humor (b) Cornea  
 (c) Ciliary muscle (d) Iris

PART – B (5 x 2= 10Marks)

11. Classify the types of endoplasmic reticulum. CO1- U
12. Write essential functions of Cardiovascular system CO2- U
13. Compare and contrast Sympathetic and Parasympathetic nervous system. CO3- Ana
14. Give an account on parts of stomach. CO4- U
15. What is sensory adaptation? CO5- U

PART – C (5 x 16= 80Marks)

16. (a) What is a cell? Draw and explain different functions and internal structural organelles of cell. CO1-U (16)
- Or
- (b) Enumerate in detail about action potential and its origin and propagation. CO1 -U (16)
17. (a) Explain the electromechanical activity of heart. CO2 -U (16)
- Or
- (b) Explain in detail about types of breathing and its mechanism. CO2 -U (16)
18. (a) Sketch anatomy of spinal cord and explain in detail. CO3- Ana (16)
- Or
- (b) Relate Synapse and how neurotransmitters cross synaptic cleft CO3- U (16)
19. (a) Mention the importance of GI tract. Explain it with a suitable diagram. CO4-Ana (16)
- Or
- (b) Describe in detail about mechanism of urine formation with necessary diagrams. CO4 -U (16)
20. (a) Summarize and enlighten about Classification of Bones CO5- U (16)
- Or
- (b) Explain in detail about various internal organs of Ear with example. CO5- Ana (16)

