

#1-#16 MULT. CHOICE QUESTIONS: CHOOSE THE ONE BEST ANSWER

1. Which of the following embryonic germ layers can give rise to an epithelial tissue?

- a) endoderm
- b) mesoderm
- c) ectoderm
- d) all of the above
- e) none of the above

2. Which of the following BEST describes pseudostratified epithelium?

- a) composed of several cell layers
- b) composed of a single cell layer where the cells are all the same height
- c) composed of several cell layers, and all cells at the free surface are flat
- d) composed of a single cell layer where the cells are at different heights
- e) composed of several layers, and cells at the free surface change shape

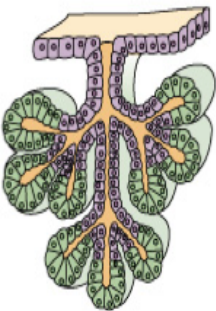
3. Which of the following is a characteristic of a stratified squamous epithelium?

- a) hemidesmosomes
- b) keratin intermediate filaments
- c) flattened cells in the apical layer
- d) all of the above
- e) none of the above

4. Regarding exocrine secretions, which of the following is CORRECT:

- a) secreted basally into connective tissue
- b) secreted apically into a duct
- c) secreted into a blood vessel lumen
- d) all of the above
- e) none of the above

5. Which of the following best describes the epithelial structure shown:



- a) simple acinar exocrine gland
- b) compound acinar exocrine gland
- c) simple acinar endocrine gland
- d) compound acinar endocrine gland
- e) unicellular gland

6. Regarding collagen, which one is NOT correct:

- a) provides great tensile strength to dense connective tissue
- b) stretches easily in fibrocartilage
- c) forms reticular fibers in glandular stroma
- d) present in both bone and cartilage
- e) most abundant protein in the body

7. Which of the following most acts to attract water to the ECM of cartilage:

- a) collagen fibers
- b) elastin fibers
- c) glycosaminoglycans
- d) glycoproteins
- e) chondroblasts

8. Which of the following is derived from a hematopoietic stem cell:

- a) fibroblast
- b) osteoblast
- c) osteoclast
- d) adipocyte
- e) mesenchymal cell

9. Which of the following has stem cell like abilities?

- a) pericyte
- b) mast cell
- c) plasma cell
- d) macrophage
- e) fibroblast

10. When macrophages migrate along collagen fibers in loose connective tissue, which of the following receptors present in the adhesion complexes involved:

- a) cadherins
- b) dystroglycans
- c) integrins
- d) claudins
- e) desmocollins

11. Which of the following is a key DIFFERENCE between bone and cartilage?

- a) only bone contains cells that have a mesenchymal origin
- b) only cartilage has a specialized connective tissue covering
- c) only bone contains living cells embedded in an ECM they produced
- d) only cartilage lacks blood vessels
- e) only bone contains collagen fibers

12. Which of the following distinguishes fibrocartilage from other types of cartilage:

- a) the presence of proteoglycans in fibrocartilage
- b) the lack of a perichondrium in fibrocartilage
- c) the presence of chondrocytes in fibrocartilage
- d) the lack of fibroblasts in fibrocartilage
- e) the presence of collagen fibers in fibrocartilage

13. Which of the following distinguishes spongy bone from compact bone:

- a) the presence of osteoid in spongy bone
- b) the lack of haversian canals in spongy bone
- c) the presence of osteoblasts in spongy bone
- d) the lack of hydroxyapatite in spongy bone
- e) the presence of lacunae in spongy bone

14. Which of the following is most responsible for the increased bone density that is a characteristic of osteopetrosis:

- a) increased carbonic anhydrase activity in osteoblasts
- b) decreased carbonic anhydrase activity in osteoclasts
- c) increased collagenase secretion by osteoclasts
- d) decreased collagen secretion by osteoblasts
- e) increased volume of marrow cavities of long bones

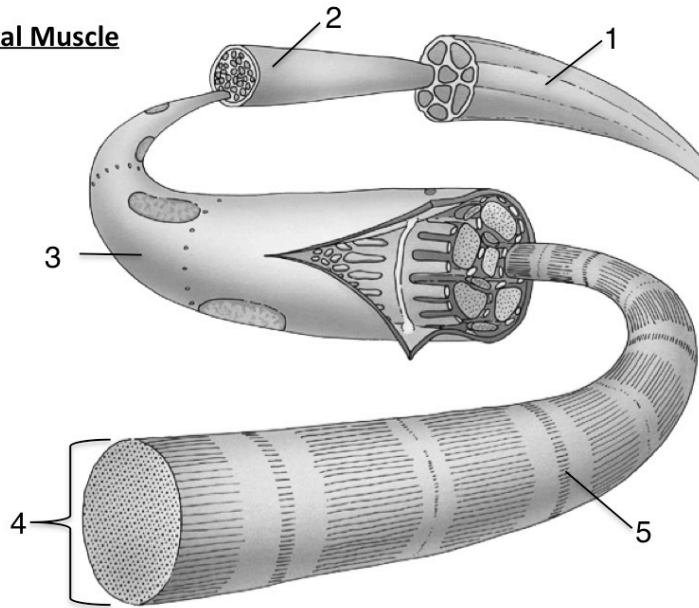
15. Which connective tissue investment surrounds a single skeletal muscle fascicle:

- a) endomysium
- b) perimysium
- c) epimysium
- d) basal lamina
- e) sarcolemma

16. Which of the following facilitates myosin binding to actin during skeletal muscle contraction:

- a) actin detaches from the Z-disk
- b) myosin attaches to the Z-disk
- c) tropomyosin shifts position on actin
- d) troponin shifts position on myosin
- e) calcium binds directly to actin and myosin

End of Multiple Choice Questions - Please Proceed to Short Answer Questions

#17-#20 SHORT ANSWER QUESTIONS: ANSWER AS REQUESTED**Fig 01: Organization of Skeletal Muscle**

17. In Fig 1, which numbered structure represents a single muscle fascicle:
 (write the number) _____

18. In Fig 1, which numbered structure represents a myofibril:
 (write the number) _____

19. In Fig 1, which numbered structure is surrounded by a connective tissue investment known as the endomysium:
 (write the number) _____

20. In Fig 1, what specific portion of the sarcomere is represented by structure #5:
 (the name of the portion of the sarcomere) _____

End of 03 SampleSetQuestions

The midterm examination will consist of questions formulated in the two formats above