

CHAPTER FOUR

Answers to WHAT DID YOU LEARN?

1. Regeneration ensures the continued repair and renewal of the epithelium.
2. Basal lamina is produced by secretions of the epithelial cells. Reticular lamina is produced by secretions of the cells in the underlying connective tissue.
3. The tight junction (zonula occludens) ensures that epithelial cells act as “gatekeepers.”
4. Desmosomes provide resistance to mechanical stress at a single point.
5. Epithelial tissues are classified according to the number of cell layers and the shape of the cell at the apical surface.
6. A simple squamous epithelium is the thinnest and occurs in areas where maximum filtration and diffusion are needed.
7. A pseudostratified epithelium looks multilayered, or stratified, because the cells’ nuclei are distributed at different levels between the apical and basal surfaces. However, although all of these epithelial cells are attached to the basement membrane, some of the cells do not reach its apical surface.
8. A transitional epithelium exhibits a variable appearance, depending on whether it is relaxed or stretched (distended). This epithelium lines the urinary bladder, an organ that changes shape as it fills with urine.
9. Secretions of endocrine glands are called hormones.
10. Exocrine glands originate from an invagination of epithelium that burrows into the deeper connective tissues. These glands maintain their contact with the epithelial surface through a duct.
11. Multicellular exocrine glands contain both a secretory portion and a conducting portion.
12. Because each secretory cell is destroyed during holocrine secretion, the ruptured, dead cells are replaced by regeneration.
13. Extracellular matrix is a nonliving material produced by and surrounding connective tissue cells. Protein fibers and ground substance are the components of the extracellular matrix.
14. Connective tissue functions include physical protection, support and structural framework, binding of structures, storage, transport, and immune protection.
15. The three categories of connective tissue are connective tissue proper, supporting connective tissue, and fluid connective tissue.
16. Collagen fibers, elastic fibers, and reticular fibers make up connective tissue proper.

17. Loose connective tissue has a scattered distribution of fibers that are in relatively low concentration; its primary is ground substance. Dense connective tissue has extensively distributed fibers, which are its primary component. Ground substance is sparse in dense connective tissue.
18. The two forms of bone tissue are spongy bone and compact bone.
19. Mucous membranes function in absorption, protection, and secretion.
20. The parietal layer of a serous membrane lines the body cavity, and the visceral layer covers organs.
21. Skeletal muscle tissue has long, cylindrical, multinucleated cells with obvious striations.
22. Intercalated discs facilitate rapid transmission of impulses for cardiac muscle contraction.
23. We do not have voluntary control over smooth muscle.
24. Glial cells are the supporting cells in nervous tissue.