**Chapter 7 – Skeletal System**

*7.1 Introduction*

1. Active, living tissues found in bone include. (p. 131)

a. blood

b. nervous tissue

c. dense connective tissue

d. bone tissue

e. all of the above

*7.2 Bone Structure*

2. Sketch a typical long bone, and label its epiphyses, diaphysis, medullary cavity, periosteum, and articular cartilages. On the sketch, designate the locations of compact and spongy bone. (p. 131)

3. Discuss the functions of the parts labeled in the sketch you made for question 2. (p. 131)

4. Differentiate between the microscopic structure of compact bone and spongy bone. (p. 132)

*7.3 Bone Development and Growth*

5. Explain how the development of intramembranous bone differs from that of endochondral bone. (p. 133)

6. \_\_\_\_\_\_\_\_\_\_\_\_are mature bone cells, whereas \_\_\_\_\_\_\_\_\_\_\_\_ are bone-forming cells and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are bone-resorbing cells. (p. 134)

7. Explain the function of an epiphyseal plate. (p. 134)

8. Physical exercise pulling on muscular attachments to bones stimulates \_\_\_\_\_\_\_\_\_\_\_. (p. 135)

*7.4 Bone Function*

9. Give several examples of how bones support and protect body parts. (p. 135)

10. List and describe other functions of bones. (p. 138)

*7.5 Skeletal Organization*

11. Bones of the head, neck, and trunk compose the \_\_\_\_\_\_\_\_\_\_\_\_\_ skeleton; bones of the limbs and their attachments compose the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ skeleton. (p. 139)

12. Name the bones of the cranium and the facial skeleton. (pp. 142–147)

13. Describe a typical vertebra, and distinguish among the cervical, thoracic, and lumbar vertebrae. (pp. 147–150)

14. Name the bones that compose the thoracic cage. (p. 152)

15. The clavicle and scapula form the \_\_\_\_\_\_\_\_\_\_\_ girdle, whereas the hip bones and sacrum form the \_\_\_\_\_\_\_\_\_\_\_ girdle. (pp. 153 and 157)

16. Name the bones of the upper and lower limbs. (pp. 155–161)

*7.13 Joints*

17. Describe and give an example of a fibrous joint, a cartilaginous joint, and a synovial joint. (p.162)

18. Name an example of each type of synovial joint, and describe the parts of the joint as they relate to the movement(s) allowed by that particular joint. (p. 163)

19. Joint movements occur when a muscle contracts and the muscle fibers pull the muscle’s movable end of attachment to the bone, the \_\_\_\_\_\_\_\_\_\_, toward its fixed end, the \_\_\_\_\_\_\_\_\_\_\_\_. (p. 165)

**Chapter 8 – Muscular System**

*8.1 Introduction*

1. The three types of muscle tissue are \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_. (p. 177)

*8.2 Structure of a Skeletal Muscle*

2. Describe the difference between a tendon and an aponeurosis. (p. 177)

3. Describe how connective tissue associates with skeletal muscle. (p. 177)

4. List the major parts of a skeletal muscle fiber, and describe the function of each part. (p. 177)

5. Describe a neuromuscular junction. (p. 180)

6. A neurotransmitter\_\_\_\_\_\_\_\_\_\_\_\_\_ . (p. 180)

a. binds actin fi laments, causing them to slide

b. travels across a synapse from a neuron to a muscle cell

c. ferries ATP across a synapse

d. travels across a synapse from a muscle cell to a neuron.

e. is a contractile protein that is part of a skeletal muscle fiber.

7. Define motor unit. (p. 180)

*8.3 Skeletal Muscle Contraction*

8. List the major events of muscle fiber contraction and relaxation. (p. 181)

9. Describe how ATP and creatine phosphate interact. (p. 183)

10. Describe how muscles obtain oxygen. (p. 184)

11. Describe how an oxygen debt may develop. (p. 184)

12. Explain how muscles may become fatigued. (p. 185)

13. Explain how skeletal muscle function affects the maintenance of body temperature.

(p. 186)

*8.4 Muscular Responses*

14. Define threshold stimulus. (p. 187)

15. Sketch a myogram of a single muscular twitch, and identify the latent period, period of contraction, and period of relaxation. (p. 187)

16. Explain motor unit recruitment. (p. 188)

17. Explain how skeletal muscle stimulation produces a sustained contraction. (p. 188)

18. Distinguish between tetanic contraction and muscle tone. (p. 188)

*8.5 Smooth Muscle*

19. Distinguish between multiunit and visceral smooth muscle fibers. (p. 189)

20. Compare smooth and skeletal muscle contractions. (p. 189)

*8.6 Cardiac Muscle*

21. Make a table comparing contraction mechanisms of cardiac and skeletal muscle fibers. (p.190)

*8.7 Skeletal Muscle Actions*

22. Distinguish between a muscle’s origin and its insertion. (p. 192)

23. Define prime mover, synergist, and antagonist. (p. 192)