

Bone Tissue  
Chapter Six Study Guide  
Tortora & Derrickson

1. What are the functions of the skeleton system?
2. What are the two divisions of the skeletal system?
3. How are bones classified?
4. What is the structure of a long bone? (Fig 6-1)
5. What is the structure and function of an osteon? (Fig 6.3)
  - a. What is an osteogenic cell?
  - b. What is an osteoblast? Location and function.
  - c. What is an osteoclast? Location and function.
  - d. What is an osteocyte? Location and function.
  - e. What is the difference between concentric lamellae, circumferential lamellae, and interstitial lamellae?
  - f. What is the function of a lacunae?
  - g. What is located inside the central canals?
  - h. What is the function of perforating (Volkmann) canals?
  - i. What is the function and structure of a canaliculli?
  - j. What is the difference between the periosteum and the endosteum?
  - k. What is the relationship between perforating fibers, periosteum, and tendons?
6. Bone is classified as a composite. What is a composite? Significance?
7. Is “spongy” bone hard or soft?
8. Why is the function of spongy bone (also called cancellous bone)?
9. What are trabeculae and spicules?
10. What is a diploe? How does a diploe protect our brain?
11. Where is bone marrow?
12. What is the difference between red and yellow marrow?
13. How does the distribution of red and yellow bone marrow change between childhood and adult life?
14. The formation of new bone is called osteogenesis. During fetal development, what two type of osteogenesis occur?
15. What type of connective tissue is the template during fetal development for long bones?
16. After birth, what types of osteogenesis occur before the age of 20?
17. After the age of 20, how does bone growth change? Explain
18. What is the difference between apositional bone growth and interstitial bone growth?
19. What is the difference between the epiphyseal plate and epiphyseal line?
20. What is achrodroplastic dwarfism? What is pituitary dwarfism?
21. How does the lack of growth hormone effect a child’s skeletal system?
22. What is Wolf’s Law of Bone? Relate this law to the greater trochanter of the femur.
23. How is bone remodel?
24. What is the hormonal control of calcium balance (Study Figure 6.10)
  - a. What is the source for previtamin D3? Comes from?
  - b. How is vitamin D3 created?
  - c. What is calcitriol? Calcidiol?
  - d. How does calcitriol increase the calcium concentration of blood?
  - e. What is the role of vitamin C and Vitamin A?
25. Outline the four steps of bone healing (Study Figure 6.9)
26. How do we describe the spinal curviture of a fetus?
27. How do we describe the spinal curviture of an adult?