Laboratory Report **11**

Name _____

Date _____

Section _____

Structure of Bone

PART A

Complete the following:

1. Where in the human skeleton are long bones found?

2. Distinguish between the epiphysis and the diaphysis of a long bone.

3. Where is cartilage found on a long bone?

4. Where is dense connective tissue found on a long bone?

5. In general, what is the function of bony processes?

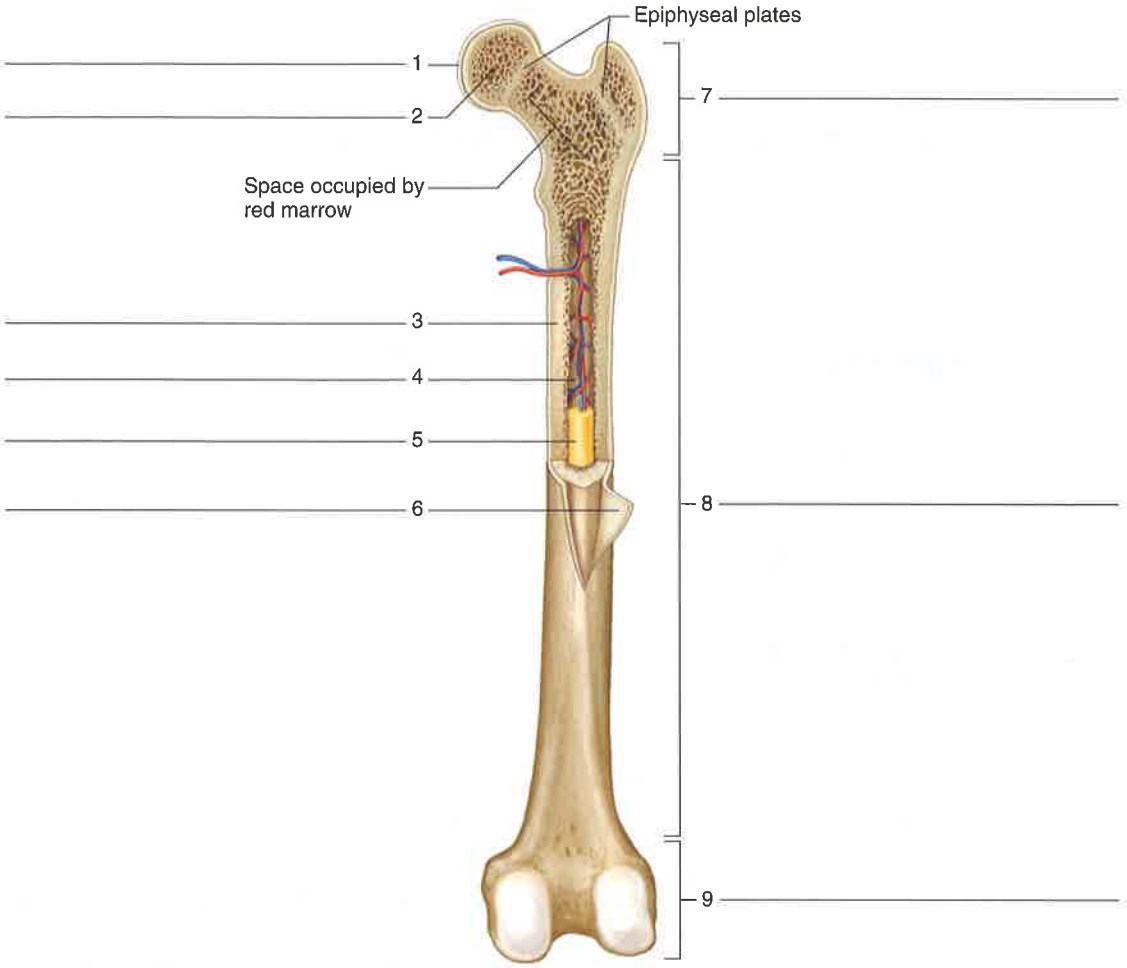
6. Distinguish between the periosteum and the endosteum.

7. What differences did you note between the structure of the compact bone and the spongy bone?

8. How are these structural differences related to the locations and functions of these two types of bone?

9. From your observations, how does the marrow in the medullary cavity compare with the marrow in the spaces of the spongy bone?

Figure 11.1 Label the major structures of this long bone (femur).



Critical Thinking Application

Explain how bone cells embedded in a solid ground substance obtain nutrients and eliminate wastes.

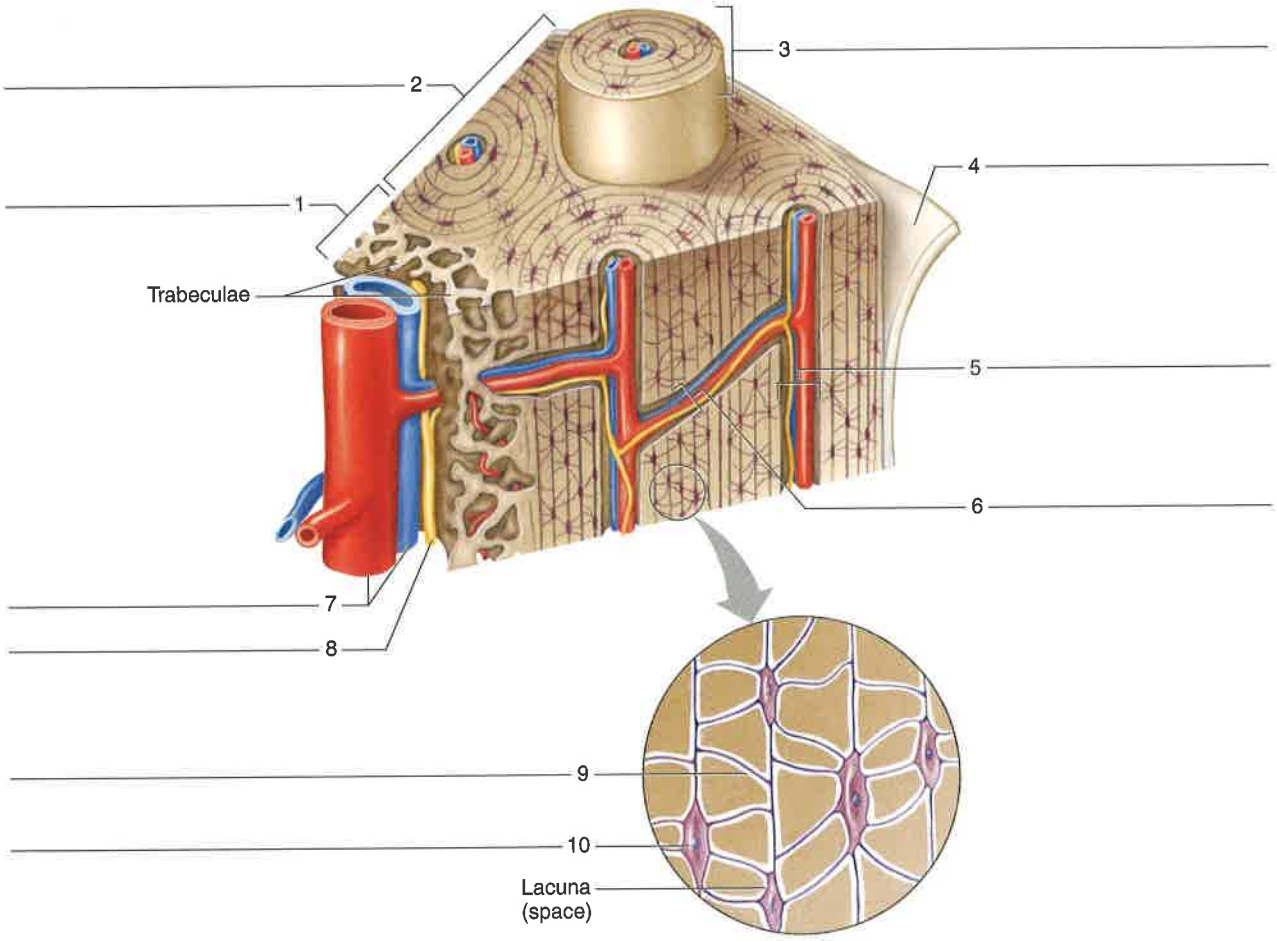
6. Complete Parts A and B of Laboratory Report 11.

DEMONSTRATION

Examine a fresh chicken bone and a chicken bone that has been soaked for several days in vinegar or exposed overnight in dilute hydrochloric acid. Wear disposable gloves for handling these bones. This acid treatment removes the inorganic salts from the bone matrix. Rinse the bones in water and note the texture and flexibility of each. Based on your observations, what quality of the fresh bone seems to be due to the inorganic salts that were removed by the acid treatment?

Examine the specimen of chicken bone that has been exposed to high temperature (baked at 121°C [250°F] for 2 hours). This treatment removes the protein and other organic substances from the bone matrix. What quality of the fresh bone seems to be due to these organic materials?

Figure 11.2 Label the features associated with the microscopic structure of bone.



Laboratory Report **12**

Name _____

Date _____

Section _____

Organization of the Skeleton

PART A

Complete the following statements:

1. The two divisions of the skeleton are the _____ skeleton and the appendicular skeleton.
2. The _____ bone supports the tongue.
3. The _____ at the inferior end of the sacrum is composed of several fused vertebrae.
4. The ribs are attached posteriorly to the _____.
5. The thoracic cage is composed of _____ pairs of ribs.
6. The scapulae and clavicles together form the _____.
7. The humerus, radius, and _____ articulate to form the elbow joint.
8. The wrist is composed of eight bones called _____.
9. The coxae (hipbones) are attached posteriorly to the _____.
10. The pelvic girdle (coxae), sacrum, and coccyx together form the _____.
11. The _____ covers the anterior surface of the knee.
12. The bones that articulate with the distal ends of the tibia and fibula are called _____.
13. All finger and toe bones are called _____.

PART B

Match the terms in column A with the definitions in column B. Place the letter of your choice in the space provided.

Column A		Column B
a. Condyle	_____	1. Small, nearly flat articular surface
b. Crest	_____	2. Deep depression
c. Facet	_____	3. Rounded process
d. Fontanel	_____	4. Opening or passageway
e. Foramen	_____	5. Interlocking line of union
f. Fossa	_____	6. Narrow, ridgelike projection
g. Suture	_____	7. Soft region between bones of skull