Chapter 6

Which of following is a function of the skeletal system?All of the answers are correct.
Which of the following are **not** components of the skeletal system? tendons
Which of the following bones is classified as "irregular" in shape?vertebra
The tip of a long bone is called the epiphysis.
The carpal bones are examples of _____ bones.short
A rib is an example of a _____ bone.flat
Bones that develop within tendons are called _____ bones. sesamoid
Small, oddly shaped bones that fill gaps between bones of the skull are called _____ bones. sutural
The humerus is an example of a(n) _____ bone. long
The region of a long bone between the end and the shaft is known as the _____. metaphysis
Which of the following labels best matches *osteocyte*?mature bone cell
Bone is composed of _____ percent cells. 2
Cells that secrete the organic components of the bone matrix are called osteoblasts.
_____ are squamous stem cells that develop into osteoblasts. Osteoprogenitor cells
Through the action of osteoclasts, bony matrix is dissolved.
The space occupied by an osteocyte is called a lacuna.
_____ account(s) for almost two-thirds of the weight of bone. Calcium phosphate
The most abundant cell type in bone is osteocytes.
The lacunae of osseous tissue contain osteocytes.
How would removing hydroxyapatite from bone matrix affect the physical properties of a bone? The bone would be more flexible.
The narrow passageways that contain cytoplasmic extensions of osteocytes are called canaliculi.
The central canal of an osteon contains blood vessels.
The interconnecting tiny arches of bone tissue found in spongy bone are called osteons.
The type of bone that is adapted to withstand stresses that arrive from many directions is _____ bone. spongy
The structural units of mature compact bone are called osteons.
Fat is stored within the medullary cavity.
Which of the following is a characteristic of bone? The bone matrix is very dense and contains deposits of calcium salts
_____ marrow is found between the trabeculae of spongy bone. Red
The lining of the medullary cavity is called the endosteum.
The articular cartilage of a typical long bone is composed of what type of cartilage? hyaline cartilage
The deposition of calcium salts in bone tissues is referred to as ossification
Endochondral ossification begins with the formation of a(n) cartilage model.
The following are important steps in the process of endochondral ossification.

1. Enlarged chondrocytes die.
2. Osteoblasts replace calcified cartilage with spongy bone.
3. Chondrocytes enlarge and the surrounding matrix begins to calcify.
4. Blood vessels invade the perichondrium.
5. Perichondrial cells become osteoblasts and produce a thin shell of bone. 3, 1, 4, 5, 2

Intramembranous ossification begins with differentiation of _____ cells. mesenchymal
Which of the following statements about Marfan's syndrome is **false**? results in short, stubby fingers
Intramembranous ossification produces flat bones as in the bones of the roof of the skull.
Suppose that epiphyseal lines appear in a 10-year-old's long bones. Which of the following statements is therefore **true**? The epiphyseal plates have ossified and further growth in length is not possible.
During appositional growth bones grow wider.
When the epiphyseal plate is replaced by bone, long bones have reached their adult length.
The following are major steps in the process of intramembranous ossification:

1. Clusters of osteoblasts form osteoid that becomes mineralized.
2. Osteoblasts differentiate within mesenchymal connective tissue.
3. Spicules of bone radiate out from the ossification centers.
4. Mesenchymal cells aggregate. 4, 2, 1, 3

In normal adult bones, a portion of the protein and mineral content is replaced each year.
A lack of exercise could result in porous and weak bones.
Excessive growth hormone prior to puberty could result in gigantism.
Factors that are necessary for proper bone formation include all of the following, **except** vitamin E.
Where in the body does the production of precursors for the synthesis of calcitriol occur? skin
The most abundant mineral in the human body is calcium.
Elevated levels of calcium ion in the blood stimulate the secretion of the hormone calcitonin.
Parathyroid hormone functions in all of the following ways, **except** that it inhibits calcitonin secretion.
A child with rickets often has bowed legs.
Hundreds of years ago explorers often died of scurvy. How can this bone-related disease be prevented?
Supplement the diet with fresh fruit rich in vitamin C.
How is vitamin D (vitamin D3) related to calcium homeostasis in bone?
Vitamin D is involved in calcium absorption by the digestive tract so calcium is available for ossification and remodeling.
The disease osteomalacia causes calcium loss from the skeleton, which would result in bones that are weaker and more flexible.