

Skeletal System Review

1. List four functions of the skeletal system:

- a.
- b.
- c.
- d.

2. Define ossification and identify the roles of the osteoblasts, osteocytes, and osteoclasts in the growth of bones.

3. Describe the structural and functional features of a typical long bone.

- a. periosteum
- b. diaphysis
- c. epiphysis
- d. red marrow
- e. yellow marrow
- f. articular cartilage
- g. endosteum

4. Describe the following classes of bone and give an example of each.

- a. long
- b. short
- c. flat
- d. irregular

Skeletal System Review

1. List four functions of the skeletal system:
 - a. Support
 - b. Protection
 - c. Movement Facilitation
 - d. Mineral Storage

2. Define ossification and identify the roles of the osteoblasts, osteocytes, and osteoclasts in the growth of bones. **Ossification: the process by which bones form in the body by replacing pre-existing connective tissue with bone. Process occurs during bone growth. Osteoblasts: cells responsible for bone formation Osteocytes: mature bone cells Osteoclasts: cells that break down bone tissue**

3. Describe the structural and functional features of a typical long bone.
 - a. periosteum-**A dense, white fibrous covering around the surface of bone. Essential for bone growth, repair, and nutrition -Serves as a point of attachment for ligaments and tendons**
 - b. diaphysis- **The shaft or long, main, portion of the long bone**
 - c. epiphysis- **The expanded ends of the long bone**
 - d. red marrow- **Blood cell forming tissue located within the spaces or the spongy bone of the long bones. Forms all blood cells types including erythrocytes, leukocytes, and thrombocytes.**
 - e. yellow marrow- **Fat storing tissues found within the medullary cavities of long bones**
 - f. articular cartilage- **A thin layer of hyaline cartilage covering the epiphysis in order to reduce friction during the movement of the joint.**

4. Describe the following classes of bone and give an example of each.
 - a. long - **Longer than they are wide (humerus, ulna, radius, metacarpals, phalanges, femur, tibia, fibula, metatarsals)**
 - b. short **Cube-shaped, nearly equal in length and width (tarsals and carpals)**
 - c. flat **Generally thin and flat, composed of two layers of compact bone on the outside with a layer of spongy bone on the inside. Provide protection and surface area for muscle attachment (cranial bones, sternum, ribs, and scapulae)**
 - d. irregular **Various shaped bones (cannot be classified into any other groups or classifications). Vary in the amount of spongy and compact bone. (facial bones, vertebrae)**

5. Describe the following bone markings:

- a. foramen**
- b. meatus**
- c. sinus**
- d. fossa**
- e. condyle**
- f. tuberosity**
- g. trochanter**
- h. tubercle**
- i. process**

6. Describe the terms suture and fontanel.

7. Identify the major groups of bone which belong to the axial skeleton and to the appendicular skeleton.

- a. axial**
- b. appendicular**

8. Describe the location of the following skull bones:

- a. mandible**
- b. hyoid**

9. List the number of vertebrae and the nicknames of the cervical vertebrae listed below:

- a. cervical**
- b. thoracic**
- c. lumbar**
- d. sacrum**
- e. coccyx**

5. Describe the following bone markings:

- a. foramen- **An opening or hole through a bone serving as a passageway for nerves or blood vessels.**
- b. meatus-**A tube-like passageway within a bone**
- c. sinus-**A space within a bone lined with a mucus membrane to reduce the weight of the bone.**
- d. fossa-**A fairly deep pit or depression.**
- e. condyle-**A large rounded prominence which articulates with another bone.**
- f. tuberosity-**An elevated, rounded, (knob-like) usually roughened area on a bone. Is generally bigger than a tubercle and is used for muscle attachment.**
- g. trochanter-**A very large, blunt process used for muscle attachment.**
- h. tubercle-**A small rounded process used for muscle attachment.**
- i. process-**Any projection from the surface of a bone used in muscle attachment.**

6. Describe the terms suture and fontanel.

Suture- **an immovable joint found only between skull bones.**

Fontanel- **membrane-filled spaces between cranial bones (soft spots of baby's skull)**

7. Identify the major groups of bone which belong to the axial skeleton and to the appendicular skeleton.

- a. axial - **Consists of bones that lie along the axis of the body Skull, Vertebral column, Ribs, Sternum, Hyoid bone**
- b. appendicular-**Contains the bones of the free appendages. Clavicle, Scapula, Humerus, Ulna, Radius, Carpals, Metacarpals, Phalanges Femur, Tibia, Fibula, Patella, Tarsals, Metatarsals, Phalanges**

8. Describe the location of the following skull bones:

- a. mandible- **jaw bone**
- b. hyoid- **located in the neck between the mandible and the larynx**

9. List the number of vertebrae and the nicknames of the cervical vertebrae listed below:

- a. cervical- **7 C1: atlas C2: axis**
- b. thoracic- **12**
- c. lumbar- **5**
- d. sacrum-**5 fused**
- e. coccyx- **2-4 fused**

10. Describe the structural classification of the following articulations:

a. fibrous

b. synovial

c. cartilaginous

11. Describe a ligament and its role in a synovial joint.

12. Describe the diseases and disorders of the skeletal system:

a. herniated disc

b. osteoarthritis

c. Osteoporosis

d. Scoliosis

e. Spina Bifida

10. Describe the structural classification of the following articulations:

- a. fibrous- Articulating bones are held very closely together by fibrous connective tissue**
- b. synovial- Joints which contain a synovial cavity between the articulating bones.**
- c. cartilaginous- Articulating bones are held tightly together by cartilage**

11. Describe a ligament and its role in a synovial joint.

LIGAMENTS A band or cord of dense fibrous connective tissue extending from one bone to another bone to provide a joint with structural stability

12. Describe the diseases and disorders of the skeletal system:

- a. herniated disc- a ruptured, slipped, or bulging disks, occurs when the nucleus pulposus spills out into the spinal canal and presses on the spinal nerves in that region.**
- b. osteoarthritis- Osteoarthritis is a type of arthritis caused by the destruction of cartilage from the joints.**
- c. Osteoporosis- Osteoporosis in which there is a loss of bone mass and bone density which leads to porous bones making them more susceptible to fracture.**
- d. Scoliosis- Scoliosis is the abnormal lateral curvature of the spine (vertebral column) resulting in a S-shaped appearance.**
- e. Spina Bifida- Spina bifida occurs when the posterior part of the vertebrae fails to form properly and does not enclose the spinal cord.**