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Skeletal System: The Appendicular Skeleton

I. Pectoral Girdle and Upper Extremity

☞ *Concept:* The structure of the pectoral girdle and upper extremities is adaptive for freedom of movement and extensive muscle attachment.

A. Multiple Choice Questions

- ___ 1. Which is *not* true of the pectoral girdle?
(a) It consists of two paired bones.
(b) It is an incomplete girdle, having only an anterior attachment to the sternum.
(c) It is the uppermost of the two girdles of the axial skeleton.
(d) It provides attachment sites for muscles that move the brachium and forearm.
- ___ 2. A conoid tubercle is present on the inferior surface of the lateral end of
(a) the sternum. (c) the clavicle.
(b) the scapula. (d) the humerus.
- ___ 3. Which is *not* a structural feature of the scapula?
(a) infraspinous fossa (c) acromion
(b) coracoid process (d) coronoid process
- ___ 4. The head of the humerus articulates with
(a) the olecranon fossa. (c) the acromion.
(b) the glenoid cavity. (d) the subscapular fossa.
- ___ 5. Which is *not* a structural feature of the ulna?
(a) radial notch (c) styloid process
(b) ulnar notch (d) coronoid process
- ___ 6. A styloid process is a structural feature of both
(a) the ulna and radius. (c) the radius and scapula.
(b) the ulna and humerus. (d) the radius and humerus.
- ___ 7. Which of the following wrist bones articulates with the bones of the antebrachium?
(a) scaphoid (d) trapezium
(b) capitate (e) both a and c
(c) lunate
- ___ 8. The proximal row of carpal bones includes each of the following *except*
(a) the pisiform. (c) the triquetrum.
(b) the lunate. (d) the trapezium.

B. True–False Questions

- ___ 1. The scapula serves as an attachment site for a number of muscles.
- ___ 2. The humerus is the longest bone in the body.

- ___ 3. The brachium is the region of the forearm within the upper extremity.
- ___ 4. Both the scapula and the ulna have a coracoid process.
- ___ 5. The radius is the bone of the antebrachium that is located on the same side as the thumb.
- ___ 6. The heads of the metacarpal bones form the knuckles of a clenched fist.
- ___ 7. There are three bones in each digit of the hand.
- ___ 8. The hand consist of 8 carpal bones, 5 metacarpal bones, and 14 phalanges.

II. Pelvic Girdle and Lower Extremity

☞ *Concept:* The structure of the pelvic girdle and lower extremities is adaptive for support and locomotion. Extensive processes and surface features on certain bones of the pelvic girdle and lower extremities accommodate massive muscles used in body movement and in maintaining posture.

A. Multiple Choice Questions

- ___ 1. Which is *not* true of the pelvic girdle?
 - (a) It is firmly fused anteriorly and posteriorly.
 - (b) It supports and protects the lower viscera
 - (c) It consists of two ossa coxae which, in turn, are composed of six fused bones.
 - (d) It is thinner and lighter in adult females than it is in adult males.
- ___ 2. Which bone is not *one* of the three that form the os coxae?
 - (a) pubis
 - (b) ilium
 - (c) symphysis pubis
 - (d) ischium
- ___ 3. Compared to the female pelvis, the male pelvis
 - (a) is thinner and lighter.
 - (b) has a shallower symphysis pubis.
 - (c) has a narrower true pelvis.
 - (d) has a wider pubic angle.
- ___ 4. The head of the femur articulates with
 - (a) the glenoid cavity.
 - (b) the acetabulum.
 - (c) the obturator foramen.
 - (d) the patella.
- ___ 5. The medial malleolus is a process on
 - (a) the tibia.
 - (b) the calcaneus.
 - (c) the fibula.
 - (d) the talus.
- ___ 6. The largest tarsal bone is
 - (a) the talus.
 - (b) the cuboid.
 - (c) the navicular.
 - (d) the calcaneus.
- ___ 7. The distal row of tarsal bones includes each of the following *except*
 - (a) the navicular.
 - (b) the lateral cuneiform.
 - (c) the cuboid.
 - (d) the intermediate cuneiform.
- ___ 8. Which of the following bones is incorrectly paired with its diagnostic bony feature?
 - (a) femur/linea aspera
 - (b) ilium/auricular surface
 - (c) pubis/ sciatic notch
 - (d) tibia/intercondylar eminence

B. True–False Questions

- ___ 1. Pelvimetry measures the dimensions of the symphysis pubis to determine whether a cesarean delivery might be necessary.
- ___ 2. The ilium is the largest of the pelvic bones.
- ___ 3. The sciatic nerve and the femoral vessels pass through the large obturator foramen of the os coxae.
- ___ 4. The femur is the longest, heaviest, strongest bone in the body.
- ___ 5. The patella articulates with the femur, tibia, and fibula at the knee joint.
- ___ 6. Each metatarsal bone has a proximal base, a body, and a distal head.
- ___ 7. The ball of the foot is formed by the head of the first metatarsal bone.
- ___ 8. The foot has both a longitudinal and a transverse arch.

III. Developmental Exposition of the Appendicular Skeleton

A. Multiple Choice Questions

- ___ 1. The apical ectodermal ridge promotes bone and _____ development.
 - (a) nerve
 - (b) vessel
 - (c) muscle
 - (d) glandular
- ___ 2. Individual fingers are formed from
 - (a) an ectodermal ridge.
 - (b) thalidomide.
 - (c) digital rays.
 - (d) finger buds.
- ___ 3. The individual digits of the hand and feet separate by the end of the _____ week of development.
 - (a) fifth
 - (b) eleventh
 - (c) sixth
 - (d) fourth
- ___ 4. The high incidence of limb deformities in infants between 1957 and 1962 was due to exposure of the embryo to
 - (a) radiation.
 - (b) pesticides.
 - (c) thalidomide.
 - (d) FD&C red dye number 2.

B. True–False Questions

- ___ 1. Hyaline cartilage is gradually replaced by bone in intramembranous ossification.
- ___ 2. The development of the appendicular skeleton is initiated with the appearance of four small limb buds in the embryo.

IV. Clinical Considerations

A. Multiple Choice Questions

- ___ 1. Webbed digits are a common limb malformation referred to as
(a) polydactyly. (c) syndactyly.
(b) aryodactyly. (d) talipes.
- ___ 2. The most common type of fracture is
(a) a pathologic fracture. (c) a traumatic fracture.
(b) a spontaneous fracture. (d) a collateral fracture.
- ___ 3. A fracture of the lateral malleolus is commonly called
(a) a fibular fracture. (c) a Pott's fracture.
(b) a tibial fracture. (d) a Langstein fracture.
- ___ 4. The final event in the natural repair of a bone is
(a) the formation of a blood clot.
(b) the formation of the callus.
(c) the remodeling of the callus.
(d) phagocytic activity.

B. True–False Questions

- ___ 1. Most fractures are caused by injuries and are called traumatic fractures.
- ___ 2. Tearing off a finger is known as avulsion.
- ___ 3. Talipes is a developmental disorder that may be the result of both genetic and environmental factors.

V. Chapter Review

A. Completion Questions

1. The _____ is the most commonly fractured bone in the body.
2. The brachium consists of a single bone called the _____.
3. Long bones contain _____ foramina for the passage of blood vessels into and out of the centers of the bones.
4. Manus refers to the _____ and pes refers to the _____.
5. The pectoral and pelvic girdles and the bones of the upper and lower extremities compose the bones of the _____ skeleton.
6. The _____ has an anatomical neck and a surgical neck.
7. The _____ of the ossa coxae articulates with the sacrum.
8. The _____ arch of the foot is divided into medial and lateral portions.
9. The patella is a _____ bone in that it forms within a tendon.

B. Matching Questions

Match the bone with its diagnostic feature.

- | | |
|-----------------|------------------------|
| ___ 1. femur | (a) ulnar notch |
| ___ 2. humerus | (b) acetabulum |
| ___ 3. clavicle | (c) medial malleolus |
| ___ 4. scapula | (d) trochlea |
| ___ 5. tibia | (e) auricular surface |
| ___ 6. ulna | (f) acromion |
| ___ 7. ilium | (g) greater trochanter |
| ___ 8. fibula | (h) lateral malleolus |
| ___ 9. ischium | (i) conoid tubercle |
| ___ 10. radius | (j) olecranon |