

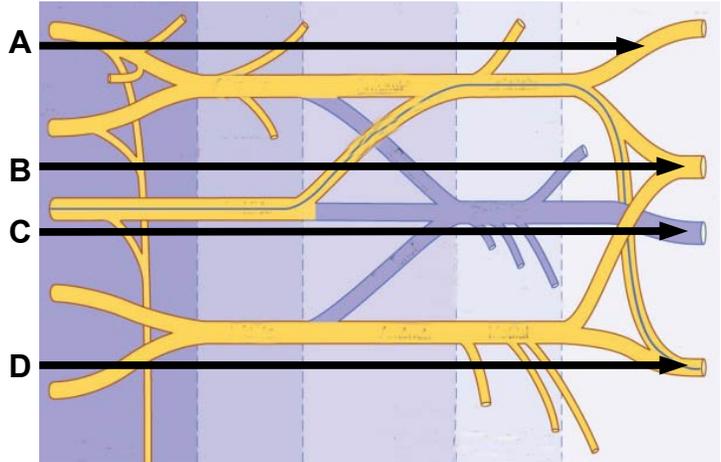
**Graduate HUMAN GROSS ANATOMY – ANAT 503  
EXAMINATION 5**

November 04, 2022

**PART I. Answer in the space provided. (16 pts)**

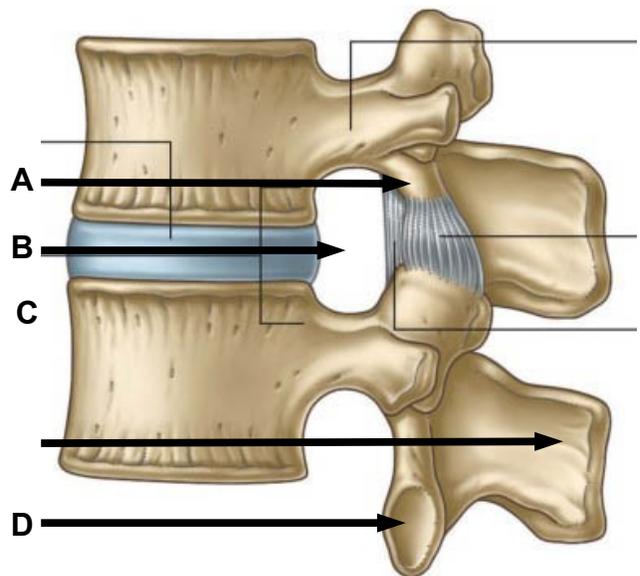
1. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



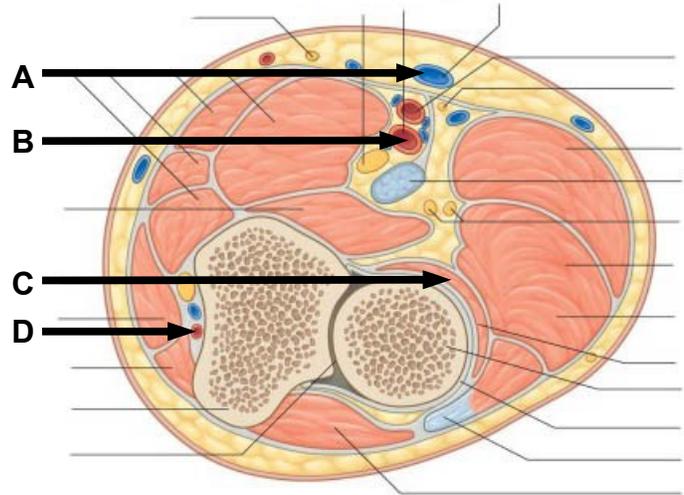
2. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



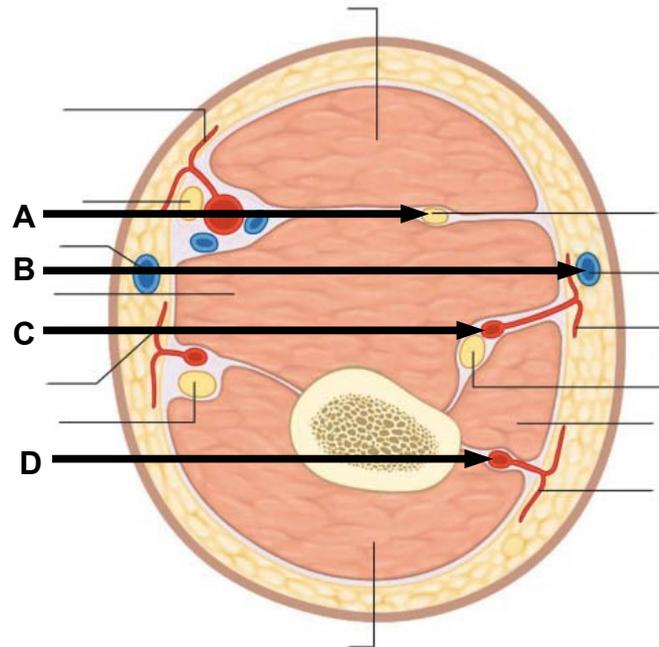
3. Identify the Structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



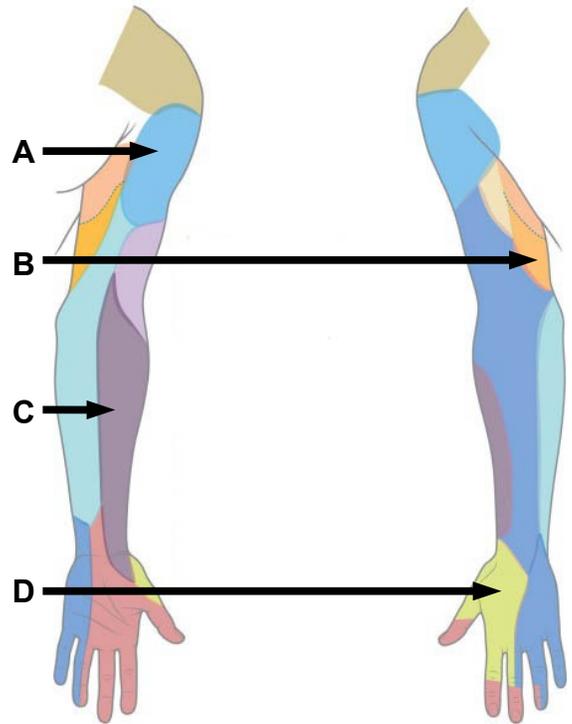
4. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



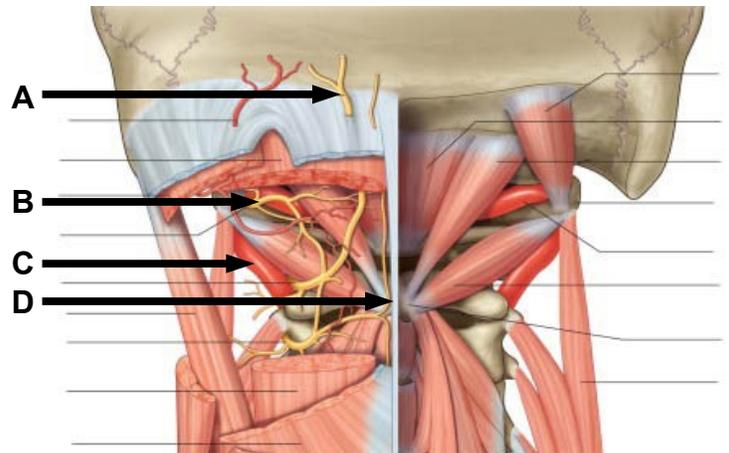
5. Identify the nerve distribution. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



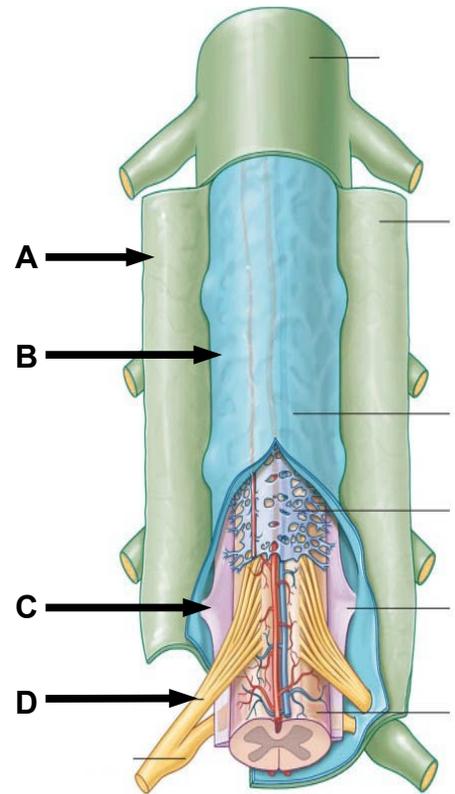
6. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



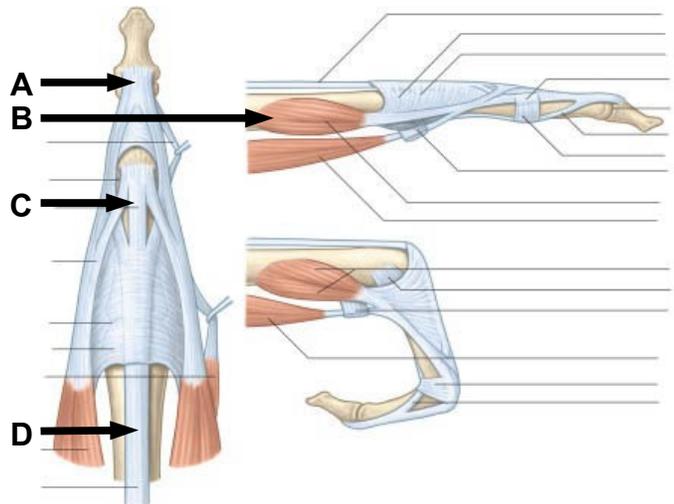
7. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



8. Identify the structures. (2 pts)

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_



**Part II. Circle the correct answer. All, none, or some may apply. (18 pts)**

**1. With regard to the back, suboccipital region, and scapular region:**

- a) The serratus posterior superior elevates the lower ribs.
- b) The spine of the axis is bifid, whereas the atlas has a tubercle in place of a spine.
- c) The dorsal scapular nerve passes medial to the levator scapulae muscle.
- d) Ligation (occlusion, blockage) of the 2nd part of the axillary artery causes reverse blood flow in the dorsal scapular artery.
- e) The coracoid process provides for the insertion of the short head of the biceps and the origin of the pectoralis minor.
- f) The infraspinous fossa is the site of the acromial anastomosis.

**2. With regard to the axilla and brachial plexus:**

- a) Severance of the posterior cord of the brachial plexus causes uncompensated loss of extension at the elbow.
- b) The axillary artery begins as the continuation of the subclavian artery at the lateral margin of the second rib.
- c) Musculocutaneous nerve injury within the axilla weakens supination of the elbow.
- d) A lesion of the spinal accessory nerve weakens downward rotation of the scapula.
- e) Severance of the axillary nerve at the quadrangular space weakens all movements of the shoulder joint
- f) The long thoracic nerve arises from the posterior cord of the brachial plexus.

**3. With regard to the arm and cubital fossa:**

- a) The brachialis muscle assists the biceps brachii in flexing the forearm.
- b) The lateral head of the triceps brachii originates superior and lateral to the spiral groove, whereas the medial head of the triceps brachii originates medial and inferior to the spiral groove.
- c) A complete lesion of the ulnar nerve at the ulnar groove would cause loss of flexion of the distal interphalangeal joint for the radial two digits.
- d) The anterior ulnar recurrent artery forms an anastomosis with the superior ulnar collateral artery.
- e) A complete lesion of the median nerve superior to the cubital fossa weakens flexion at the elbow joint.
- f) The interosseous recurrent artery forms an anastomosis with the middle collateral artery.

**4. With regard to the forearm and the dorsum of the hand:**

- a) The deep radial nerve innervates all muscles in the anterior compartment of the forearm.
- b) Brachioradialis abducts the wrist and extends the fingers.
- c) The posterior interosseous artery enters the posterior compartment of the forearm by passing the superior free edge of the interosseous membrane.
- d) A lesion of the radial nerve at the spiral groove nerve causes “wrist drop.”
- e) The tendons of the interosseous muscles pass posterior to the deep transverse metacarpal ligament and anterior to the transverse axis of the metacarpophalangeal joints.
- f) The flexor pollicis longus tendon crosses the lateral side of Lister’s tubercle..

**5. With regard to the hand:**

- a) The superficial radial nerve provides sensation to the nail beds of the medial two fingers.
- b) The ulnar nerve enters the palm medial to the pisiform bone and then passes the medial aspect of the hook of the hamate.
- c) The interosseous and the lumbrical muscles limit hyperextension at the MP joint.
- d) The tendons of flexor digitorum superficialis split into medial and lateral slips that insert onto the base of the proximal phalanges.
- e) The origin of abductor digiti minimi is shared with the insertion of flexor carpi ulnaris.
- f) The anterior interosseous nerve, after providing motor innervation to pronator quadratus, continues into the hand and supplies sensation to the joints of the wrist.

**6. With regard to the joints of the upper limb:**

- a) The lateral ulnar collateral collateral ligament blends with the annular ligament.
- b) The annular ligament attaches to the radius at the ulnar notch.
- c) A shoulder separation occurs at the sternoclavicular joint and a shoulder dislocation occurs at the acromioclavicular joint.
- d) The triangular fibrocartilage complex (TFCC) includes an articular disc that limits adduction at the wrist.
- e) Opposition of the thumb occurs at the metacarpophalangeal joint.
- f) The radial tuberosity moves anterior during pronation.

**Part III. Indicate your understanding of the following. (30 pts)**

- 1. The suprascapular is vulnerable to entrapment at the suprascapular notch and at the spinoglenoid notch. Discuss the anatomical deficits for each location. (6 pts)**

2. Review the nerves and muscles that are recruited during abduction of the upper limb from 0-180 degrees. (6 pts)

3. Fractures of the scaphoid bone are prone to causing avascular necrosis. **Provide a brief account for the boundaries, contents, and relationships of the anatomical snuffbox. (6 pts)**

4. Structures pass from the neck into the back region by crossing the medial and lateral regions of the levator scapulae. **Discuss the neurovascular relationships of the levator scapulae muscle. (6 pts)**

5. The coracoid process serves as a site of attachment for muscles and ligaments. **Discuss the anatomy of the coracoid process. Include attachments and function. (6 pts)**

**Part IV. Essay. (36 pts)**

1. The shoulder joint has extreme mobility at the expense of inherent instability. The head of the humerus and the glenoid fossa have been compared to a golf ball on a tee. Much of the support for glenohumeral joint is derived from soft tissues. **Review the anatomy of the glenohumeral joint. Include bones, articulations, ligaments, capsules, cavities, contents, muscles, movements and limitations of movement, vasculature , lymphatic drainage, innervation, and relationships. (12 pts)**

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2. Narrowing of the spinal canal (spinal stenosis) is likely to cause bilateral symptoms. Narrowing of the intervertebral foramina is likely to cause unilateral symptoms. **Review the anatomy of the vertebral column and spinal canal. Include bones, articulations, ligaments, spaces, contents, muscles, movements and limitations of movement, vasculature and lymphatic drainage, innervations, and relationships. Include an account of the fascial layers penetrated during lumbar puncture. (12 pts)**

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3. The ulnar nerve may become entrapped within the cubital tunnel or within the ulnar tunnel (Guyon's canal). **Review the relationships of the cubital tunnel and the ulnar tunnel. Compare functional deficits, resting positions, and deformities caused by damage to the ulnar nerve within the cubital tunnel and within the ulnar tunnel. Provide an account for the anatomical basis of the claw hand deformity and for the ulnar paradox. (12 pts)**

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