

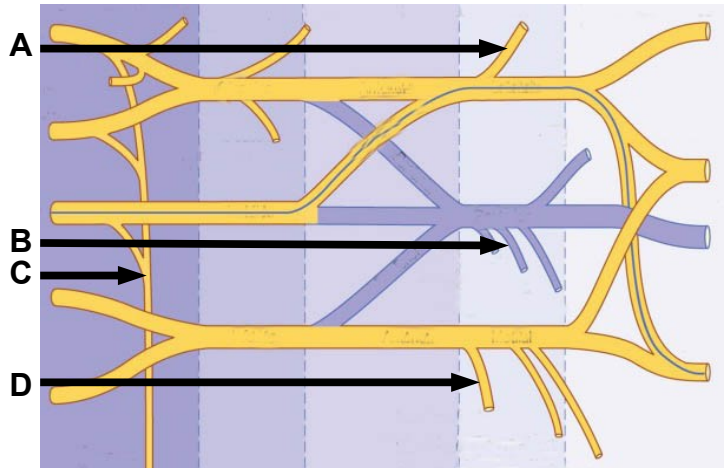
**Graduate HUMAN GROSS ANATOMY – ANAT 503
EXAMINATION 5**

November 05, 2021

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

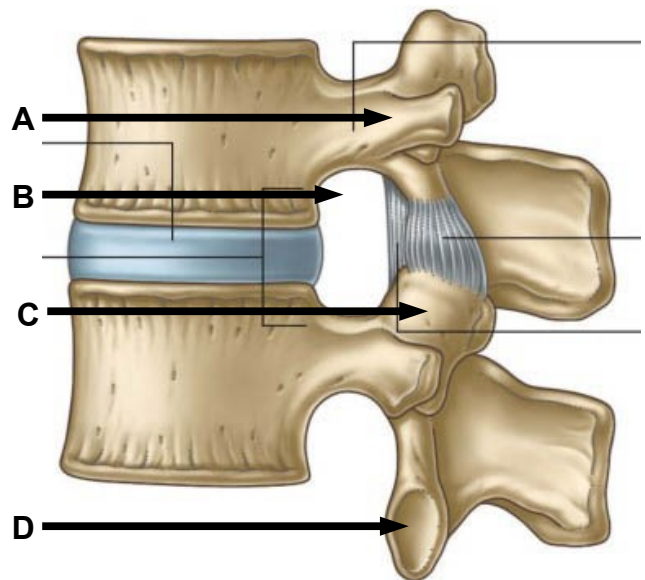
1. Identify the structures. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



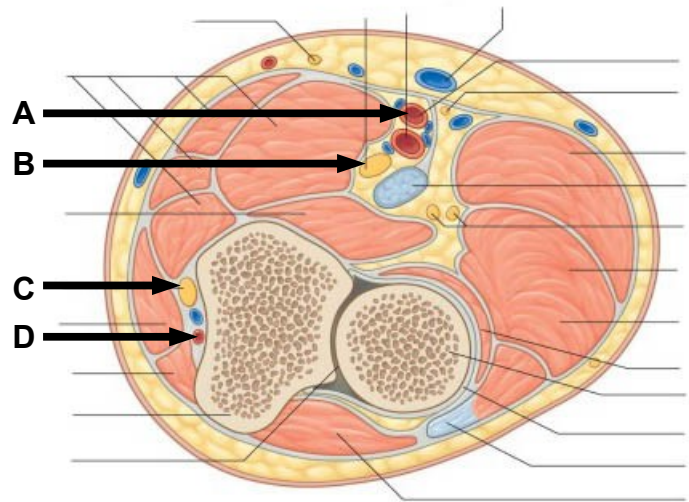
2. Identify the structures. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



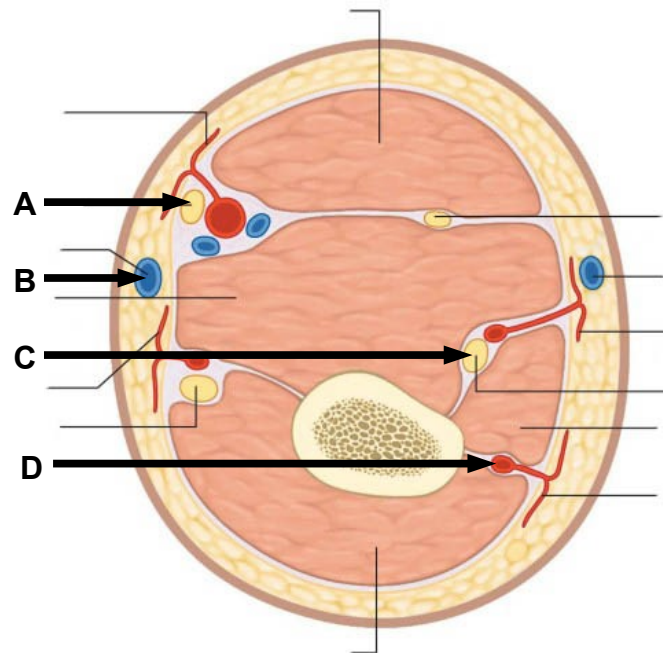
3. Identify the Structures. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



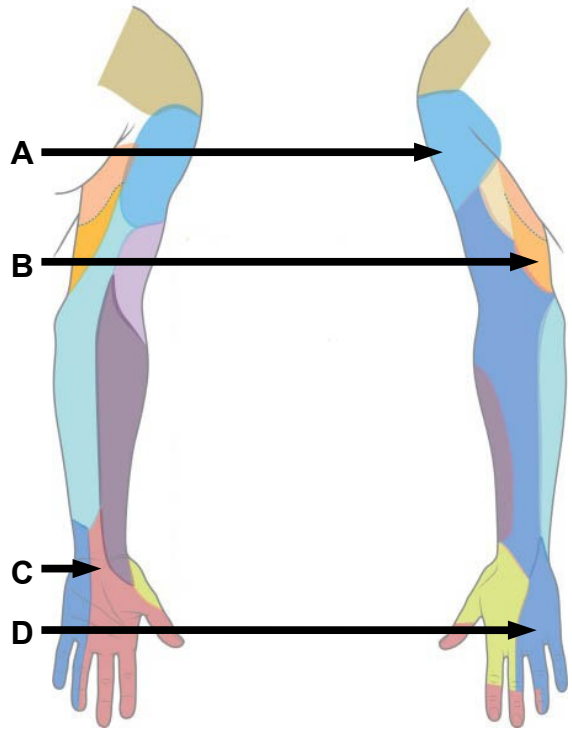
4. Identify the structures. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



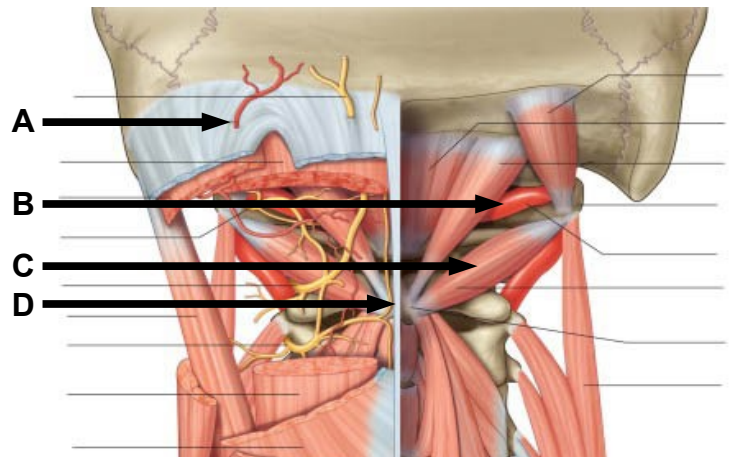
5. Identify the nerve distribution. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



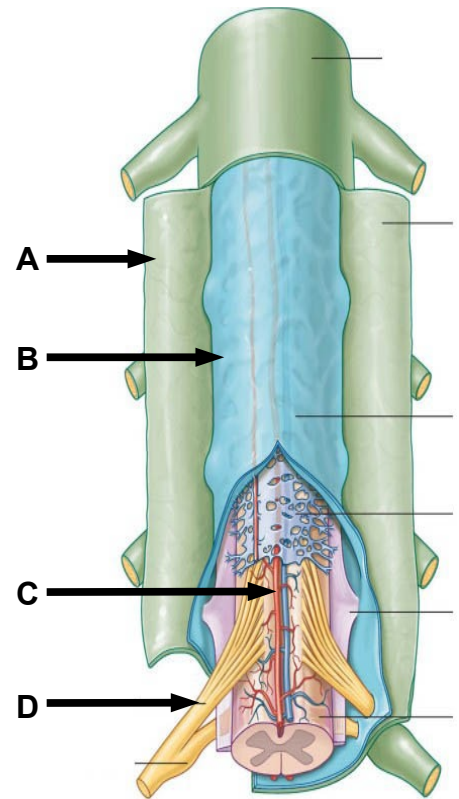
6. Identify the structures. (2 pts)

- A. _____
- B. _____
- C. _____
- D. _____



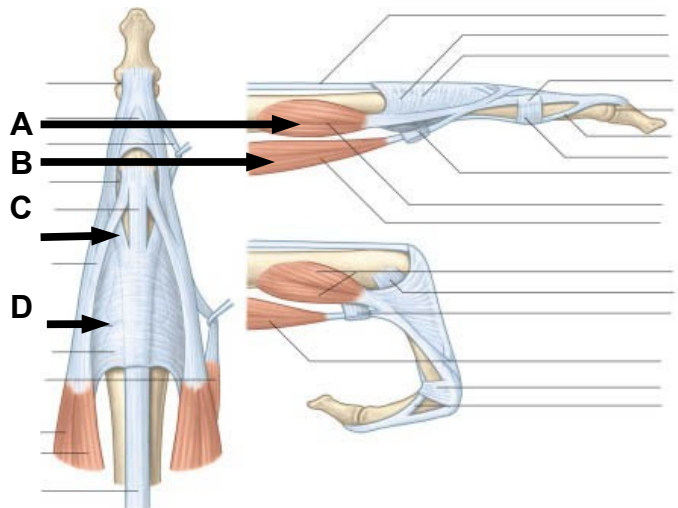
7. Identify the structures. (2 pts)

- 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 retracts the scapula
- 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 lateral to the levator scapulae muscle.
- d) Ligation (occlusion, blockage) of the 2nd part of the axillary artery causes reverse blood flow in the suprascapular artery.
- e) The coracoid process provides for the insertion of the coracobrachialis 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 flexion at the wrist.
- b) The axillary artery begins as the continuation of the subclavian artery at the upper border of the third rib.
- c) Musculocutaneous nerve injury at the axilla weakens pronation of the elbow.
- d) A lesion of the spinal accessory nerve weakens retraction 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 arm.
- 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 inferior ulnar collateral artery.
- e) A complete lesion of the median nerve superior to the cubital fossa will weaken 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 posterior 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 complete lesion of the posterior interosseous 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 medial side of Lister’s tubercle..

5. With regard to the hand:

- a) The superficial radial nerve provides sensation to the nail beds of the radial 2 fingers.
- b) The ulnar nerve enters the palm lateral to the pisiform bone and then passes the medial aspect of the hook of the hamate.
- c) The intrinsic muscles of the hand, and the lumbricals in particular, play a key role in preventing 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 radial 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 acromioclavicular joint and a shoulder dislocation occurs at the glenohumeral 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 supination.

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

- 1. Cite the anatomy of the suboccipital triangle. Include boundaries, contents, relationships and function. (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 cubital fossa into the forearm by crossing pronator teres. Nerve entrapment may within the pronator teres muscle. **Discuss the anatomy of the pronator teres muscle. Include relationships, possible entrapment, and function. (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 anatomy of the cubital tunnel and the ulnar tunnel. Provide an account for the anatomical basis of the claw hand deformity. Compare functional deficits, resting positions, and deformities caused by damage to the ulnar nerve at the cubital tunnel and at the ulnar tunnel. (12 pts)**

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