EXAM NUMBER_____

Graduate Anatomy

EXAMINATION 1

September 16, 2016

PART I. Answer in the space provided. (12 pts)

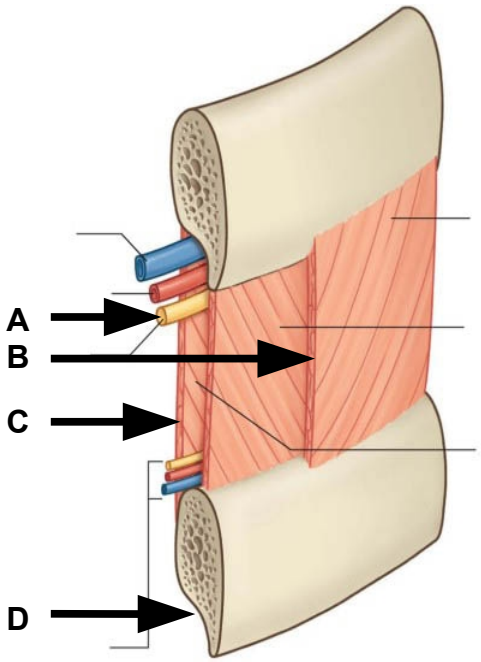
1. Identify the Structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



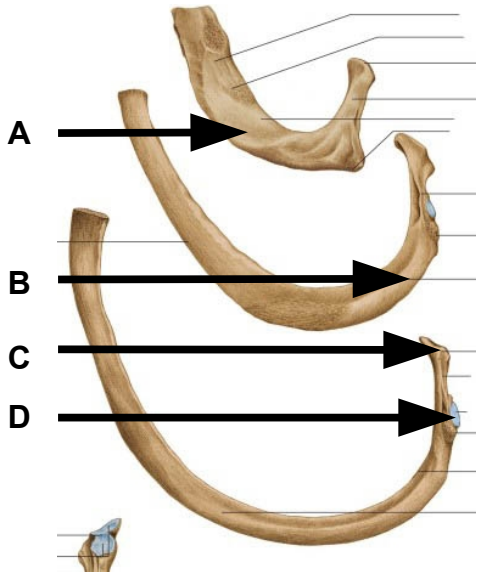
2. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



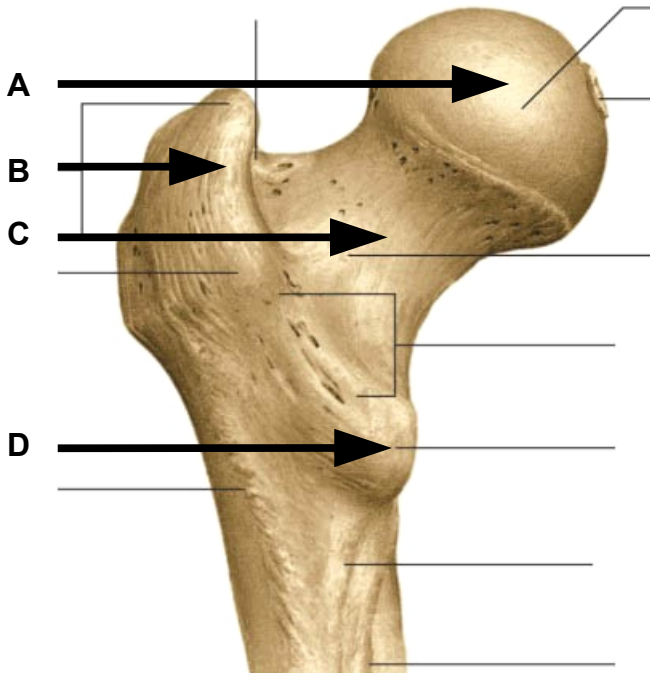
3. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



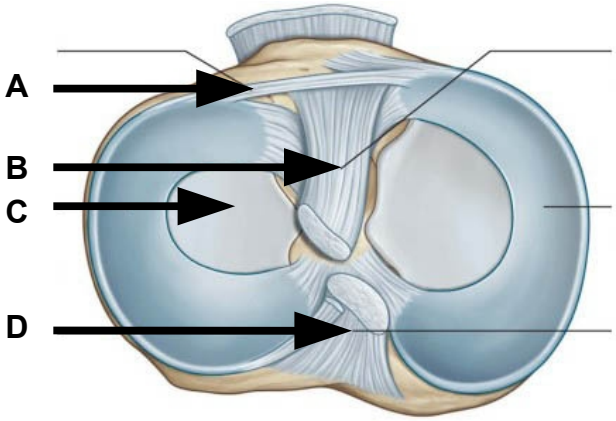
4. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



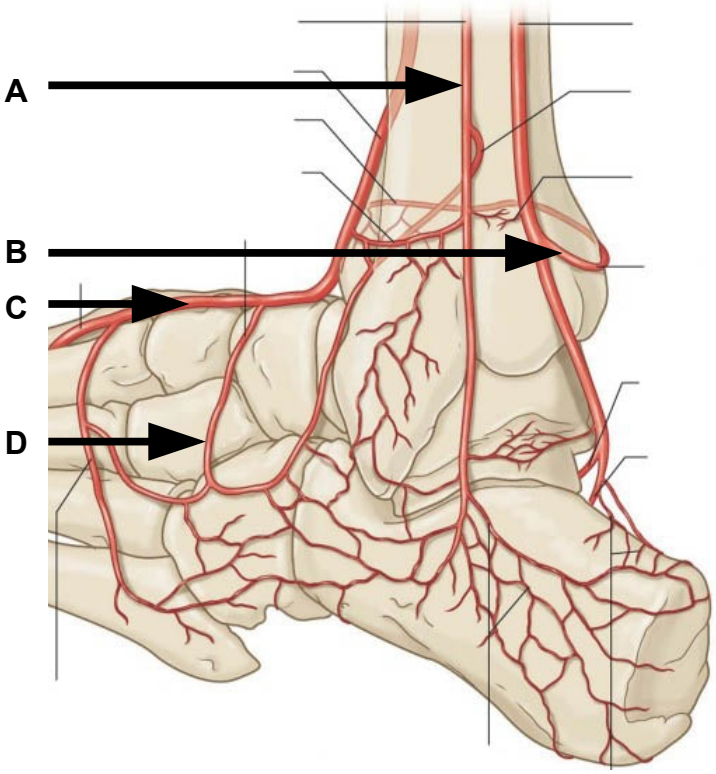
5. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



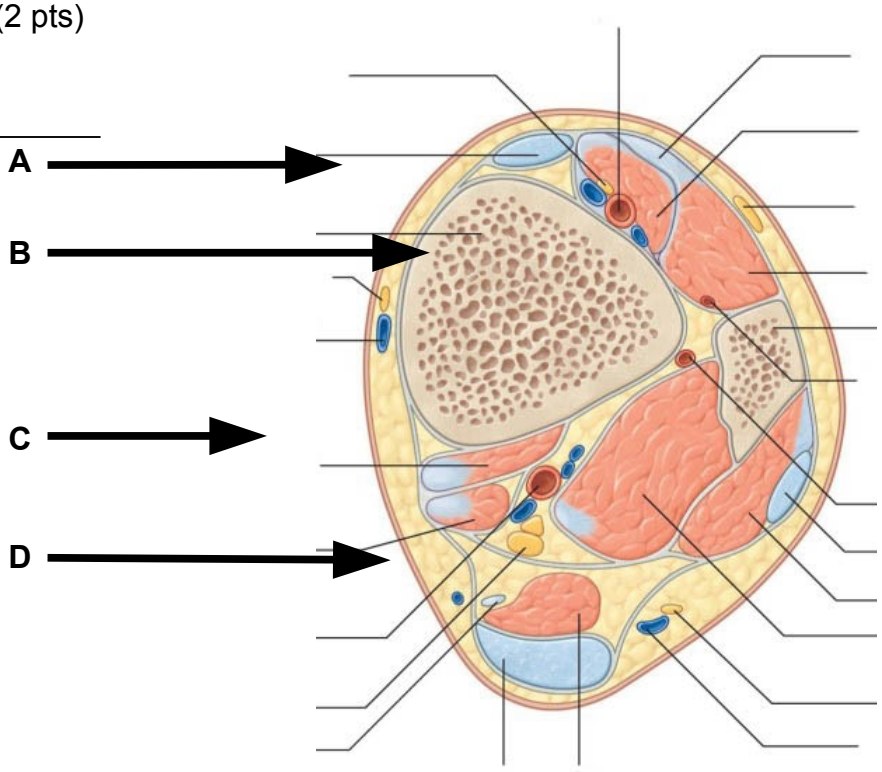
6. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



Part II. Circle the correct answer. All, none, or some may apply. (10 pts)

1. With regard to the thigh:

    a. The lateral compartment of the femoral sheath has the femoral ring at the superior entrance into the femoral canal.

    b. The inferior cornu of the saphenous hiatus is crossed by the great saphenous vein.

    c. The posterior division of the obturator nerve passes along the anterior surface of the adductor magnus and the posterior surface of the adductor brevis.

    d. Within the adductor canal the femoral vein lies deep to the femoral artery.

    e. The femoral nerve, but not the descending genicular artery, passes through the adductor hiatus.

    f. The tendons of the sartorius, gracilis, and semitendinosus muscles contribute to the formation of the pes anserinus. Each of these muscles share the same nerve supply and have different actions at the knee.

3. With regard to the leg:

    a. The superior and inferior regions of the lateral compartment of the leg receive blood supply from the genicular and malleolar anastomosis, the middle region of this compartment receives blood supply from branches of the posterior tibial artery.

    b. Posterior compartment syndrome diminishes the posterior tibial pulse and disrupts cutaneous sensation between the first and second digit.

    c. The deep peroneal nerve and the anterior tibial artery are applied to the neck of the fibula as they enter the lateral compartment of the leg.

    d. The plantaris muscle takes origin from the lateral femoral epicondyle.

4. With regard to the mediastinum and lungs:

    a. The right posterior intercostal arteries cross the anterior margin of the vertebral bodies and pass deep to the thoracic sympathetic trunk.

    b. The bifurcation of the trachea occurs at the T2 vertebral level.

    c. The left superior intercostal vein is a branch of the arch of the azygos vein.

    d. The right lymphatic duct receives lymphatic drainage from the left breast but not from the outer margin of the right breast.

    e. The epicardium and the fibrous pericardium are innervated by somatic afferent fibers.

    f. A bronchopulmonary segment consists of a pulmonary artery, tertiary bronchus, and lung tissue.

g. The superior border of the superior mediastinum is defined by a line from the sternal angle to the T1 vertebra.

h. The vagus nerve passes anterior to the hilum of the lung and the phrenic nerve passes posterior to the hilum of the lung.

i. The horizontal fissure of the right lung lies deep to the fourth rib.

j. The lingula projects from the upper lobe of the left lung.

Part III. Indicate your understanding of the following. Answer in the space provided. (30 pts)

1. **Discuss the anatomy of the right atrioventricular valve and provide an account for the opening and closing of the valve. (6 pts)**

2. Twelve percent of the women in the United States develop invasive breast cancer. **Discuss the anatomy and lymphatic drainage of the right breast. Account for the spread of cancer to the other breast and to the ipsilateral superficial inquinal lymph nodes. (6 pts)**

3. Structures that cross the neck of the fibula are easily damaged by compression and trauma. **Discuss the relationships of the neck of the fibula and the consequences of injury to this area. (6 pts)**

4. Forced abduction and anterior displacement of the leg may cause knee injuries known as the “unhappy triad.” **Discuss the anatomy of these injuries and their effect on the stability of the knee joint. (6 pts)**

5. Automobile accidents may cause posterior dislocations of the hip joint. **Discuss the ligaments that stabilize the hip joint. (6 pts)**

Part IV. Essay. (48 pts)

1. Cardiac tamponade is caused by the accumulation of blood, fluid, pus, clots, or gas in the pericardial cavity. **Discuss the anatomy of the pericardial sac, including mention of the layers, relationships, stabilization, vascularization, innervation, and lymphatic drainage. Comment on the clinical ramifications of excessive fluid in the pericardial cavity. (12 pts)**

2. A nail penetrates the medial sole of the foot and pierces the spring ligament. **Discuss the fascia, muscles, tendons, nerves, bones, and vasculature at risk with this injury. Discuss the repercussions on the medial longitudinal arch. (12 pts)**

3. **Review the boundaries (6 in number) and contents (vasculature, nerves, lymphatics) of the femoral triangle. Cite the relationships of structures entering and leaving this region. (12 pts)**

4. Incorrectly placed intragluteal injections may injure structures located superior to and inferior to the piriformis muscle. These injuries may cause permanent disability. **Discuss the anatomical relationships of the piriformis muscle. Describe the anatomical pathways of the superior gluteal nerve and the functional deficits and compensations(s) resulting from injury to this nerve. (12 pts)**