EXAM NUMBER_____

Graduate Anatomy

EXAMINATION 1

September 20, 2019

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

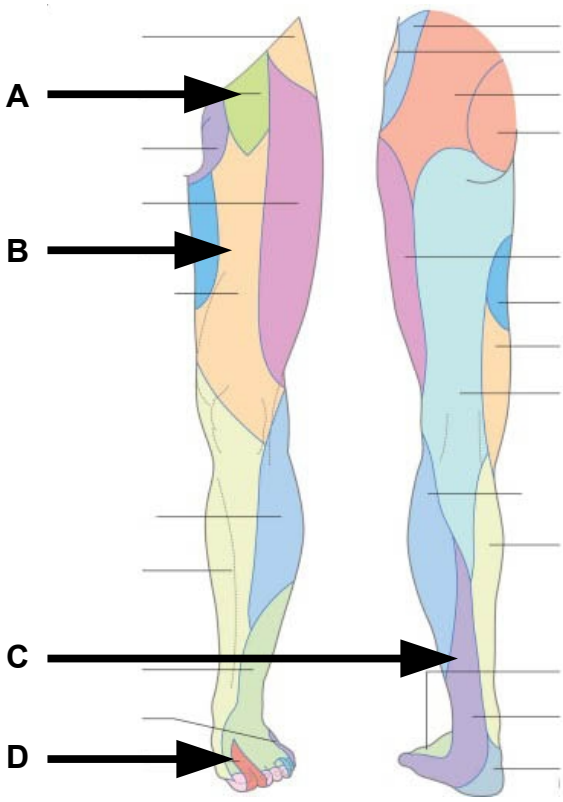
1. Identify the Nerve Distributions. (2 pts)

A. _____

B. _____

C. _____

D. _____



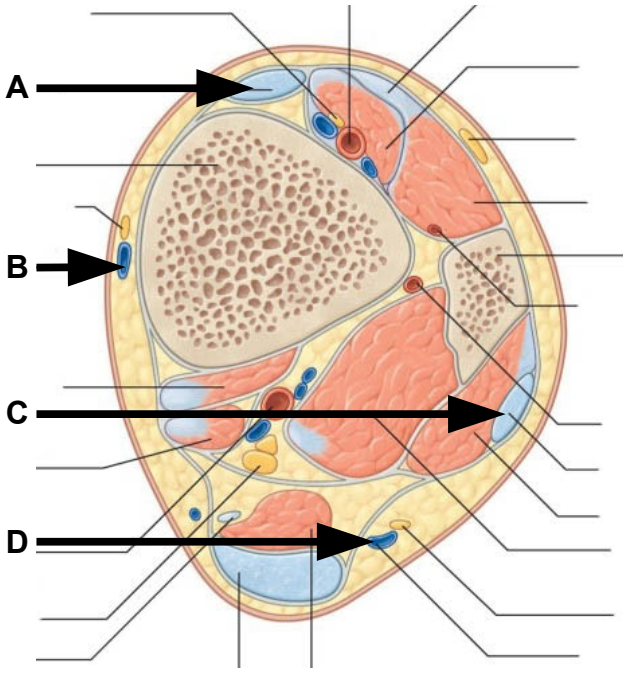
2. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



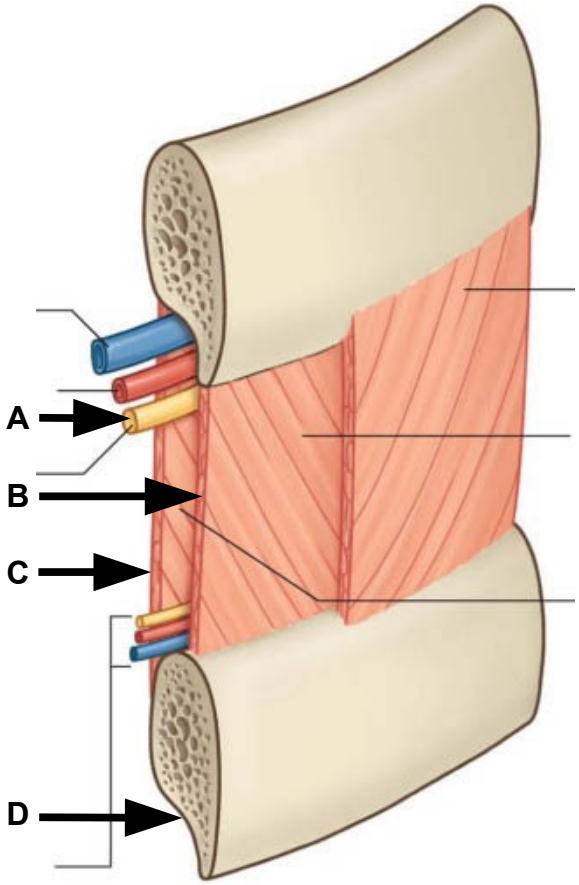
3. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



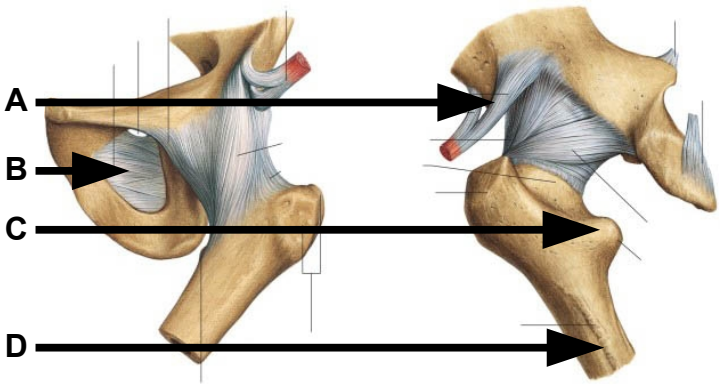
4. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



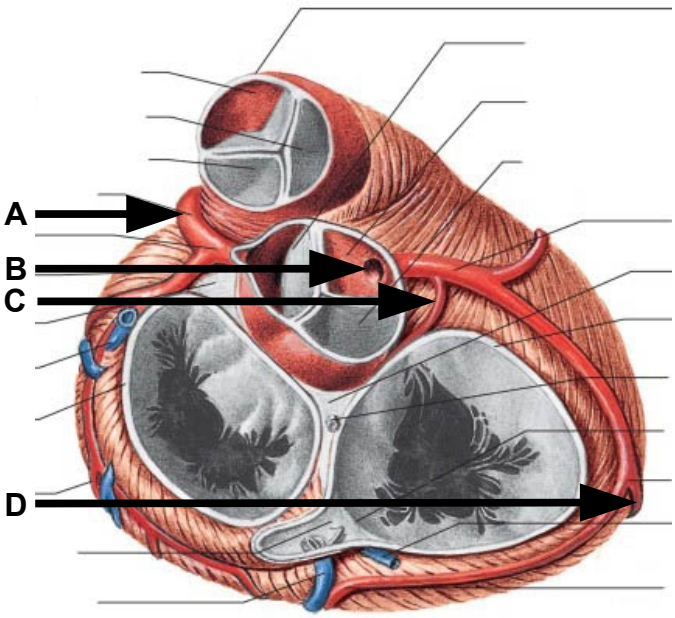
5. Identify the structures. (2 pts)

A. _____

B. _____

C. _____

D. _____



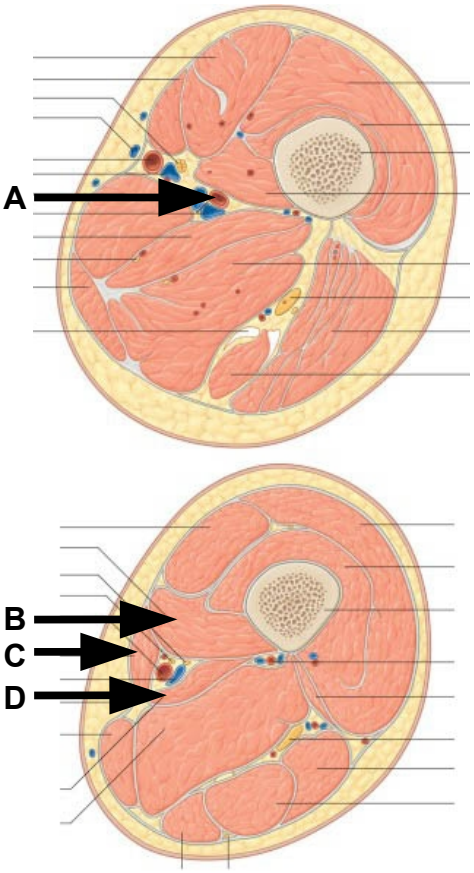
6. Identify the structures. (2 pts)

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 nerve to vastus medialis enters the adductor canal along with the nerve to vastus lateralis.

    b. The falciform edge of the saphenous hiatus is anterior to the femoral vein.

    c. The prepatellar bursa communicates with the synovial joint cavity of the knee.

    d. The saphenous nerve enters the popliteal fossa by passing through the adductor hiatus.

    e. The transverse branch of the lateral circumflex femoral artery passes posterior to sartorius and anterior to rectus femoris.

    f. Gluteus maximus inserts onto the iliotibial tract and gluteal tuberosity.

3. With regard to the hip joint:

    a. The artery of the ligament of the head of the femur is a branch of the inferior gluteal artery.

    b. The transverse acetabular ligament and acetabular notch from an osseofibrous foramen that transmits the artery of the head of the femur into the acetabular fossa.

    c. The straight head of rectus femoris and the iliofemoral ligament attach to the anterior superior spine.

    d. The reflected head of the rectus femoris arises from the posterior aspect of the acetabular rim.

4. With regard to the knee joint:

    a. The middle genicular artery passes through the oblique popliteal ligament.

    b. The coronary ligaments attach the medial and lateral menisci to the femoral condyles.

    c. The posterior cruciate ligament attaches to the medial side of the lateral femoral condyle and to the posterior intercondylar eminence of the tibia.

    d. The popliteus muscle medially rotates the hip to close-pack (lock) the knee during extension.

    e. The cruciate ligaments of the knee are extrasynovial and intracapsular.

5. With regard to the mediastinum:

    a. The left posterior intercostal arteries pass deep to the azygos vein and deep to the thoracic sympathetic trunk.

    b. The superior border of the superior mediastinum is defined by a line from the jugular notch to the T1 vertebra.

    c. The arterial mesocardium define boundaries of the oblique sinus.

    d. The arch of the azygos receives drainage from the right superior intercostal vein.

    e. Thoracic splanchnic nerves branch from the posterior side of the vagus nerve.

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

1. Heart tissues receive arterial blood supply during diastole. **Discuss the anatomy of the aortic semilunar valve. Discuss blood flow within the coronary arteries during the cardiac cycle. (6 pts)**

2. Coronary arterial blockage may require a pacemaker. **Discuss the anatomy and distribution of the sinoatrial artery. (6 pts)**

3. Rapid deceleration of a motor vehicle may cause dislocation of the hip joint. **Discuss the ligamentous support of the hip joint. Include mention of the line of gravity in regards to stability. (6 pts)**

4. Forced abduction and anterior displacement of the leg may cause an injury to the knee known as the “unhappy triad” or what Dr. Bollard referred to as the “trifecta.” **Discuss injuries of the knee known as the “unhappy triad.” (6 pts)**

5. Movement of the thoracic wall is required for respiration. **Discuss the anatomical basis for expansion along the anterior/posterior axis of the thorax known as pump handle movement. (6 pts)**

Part IV. Essay. (48 pts)

1. Twelve percent of the women in the United States develop metastatic breast cancer. **Discuss the anatomy of the right female breast. Account for fascial barriers that may impede the spread of cancer into the thoracic cavity. Account for metastatic spread to the left breast and superficial inguinal lymph nodes. (12 pts)**

2. An errant golf swing caused a crushing blow to the sustentaculum tali. **Discuss the fascia, muscles, tendons, nerves, bones, and vasculature that may be injured. Include an account for the functional deficits that may result from these injuries. (12 pts)**

3. An infection of the lateral dorsum of the foot may lead to enlarged popliteal lymph nodes that, in turn, compress structures within the popliteal fossa. **Review the boundaries and contents of the popliteal fossa. What functional deficits may result from compression of structures within the popliteal fossa? (12 pts)**

4. A penetrating injury to the upper left quadrant of the gluteal region may cause permanent disruption of the gate cycle. **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)**