Name: Gross Anatomy Exam - March 19, 2002

Instructions: For the following questions, indicate the letter that corresponds to the SINGLE MOST APPROPRIATE ANSWER.

Question 1

Multiple Choice 2.13 Points

Question: After a lesion of the tibial division of the sciatic nerve, some flexion still may be possible at the knee joint. One of the muscles responsible for this remaining action is the

Answer: A. long head of the biceps femoris.
B. soleus.
C. gastrocnemius.
D. gracilis.
E. adductor magnus.

Question 2

Multiple Choice 2.13 Points

Question: During a radical mastectomy, the surgeon observed enlarged axillary lymph nodes. She was concerned that tumor cells may have metastasized to the muscles forming the walls of the axilla. These muscles include all of the following EXCEPT for the

Answer: A. latissimus dorsi.
B. pectoralis major.
C. serratus anterior.
D. teres minor.
E. pectoralis minor.

Question 3

Multiple Choice 2.13 Points

Question: During surgery to loosen a thickening flexor retinaculum at the ankle, the surgeon could easily have injured tendons of any of the following muscles EXCEPT for the

Answer: A. flexor digitorum longus muscle.
B. flexor hallucis longus muscle.
C. tibialis anterior muscle.
D. tibialis posterior muscle.
Multiple Choice 2.13 Points

Question: An ulnar nerve that is stretched excessively during elbow flexion can produce neurologic symptoms. Surgically repositioning the nerve on the flexor side of the joint can eliminate this problem. This can be done by removal of the medial condyle and epicondyle (with muscles attached), shifting the nerve anteriorly, then reattaching the medial condyle and epicondyle, which serves as a point of origin of all of the following muscles EXCEPT for the

Answer:
A. flexor digitorum superficialis muscle.
B. pronator teres muscle.
C. flexor pollicis longus muscle.
D. flexor carpi radialis muscle.
E. flexor carpi ulnaris muscle.

Multiple Choice 2.13 Points

Question: The muscle that is most important for the movement of the index finger from the position shown in A below to the position shown in B is the

Answer:
A. first dorsal interosseus.
B. second dorsal interosseus.
C. first palmar interosseus.
D. second palmar interosseus.
E. first lumbrical.

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Question 0

Multiple Choice 2.13 Points

Question: In preparation for an intramuscular injection of a drug in an extremely thin patient, the nurse must be careful not to insert the needle deep to the gluteus medius muscle. What nerve is located deep to this muscle?

Answer:
- A. Sciatic nerve
- B. Inferior gluteal nerve
- C. Superior gluteal nerve
- D. Posterior femoral cutaneous nerve
- E. Pudendal nerve

Question 7

Multiple Choice 2.13 Points

Question: A young man brought to the Emergency Department after an auto accident had a deep laceration of the anterior area of the forearm, approximately halfway between the wrist and elbow. On testing, he had clinical signs of median nerve damage. He was brought to the operating room, where the surgeon suggested that the resident enlarge the opening of the laceration and look for the cut nerve.

Answer:
- A. near the midline of the forearm, immediately deep to the superficial fascia.
- B. near the midline, immediately deep to the antebrachial fascia.
- C. immediately lateral to the flexor carpi ulnaris muscle.
- D. on the lateral side of the forearm, deep to the brachioradialis muscle.
- E. between the flexor digitorum profundus and the flexor digitorum superficialis muscles.

Question 8

Multiple Choice 2.13 Points

Question: A muscle of the rotator cuff that can often be easily seen is the one below that is labeled
Question 9

Multiple Choice

Question: A tumor was found compressing the nerve traveling through the obturator canal. All of the following muscles would be totally paralyzed EXCEPT for the

Answer:
- A. gracilis.
- B. adductor longus.
- C. adductor brevis.
- D. adductor magnus.

Question 10

Multiple Choice

Question: A man moves his right upper limb from the anatomical position to the one shown below. The primary muscle involved in this action is the

Answer:
- A. teres minor.
- B. supinator.
- C. latissimus dorsi.
- D. extensor digitorum
- E. triceps.
Multiple Choice

Question: When one grips a key firmly (as seen below), the most important movements that keep the key from slipping include

Answer:
A. flexion and adduction of the thumb, using intrinsic muscles of the thumb.
B. extension and medial rotation of the thumb, using muscles supplied by the radial nerve.
C. flexion at the wrist, using muscles supplied mainly by the median nerve.
D. supination at the wrist, using a muscle supplied by the radial nerve.

Multiple Choice

Question: A 36-year-old woman had multiple injuries, as the result of an auto accident, including a fracture of the coracoid process. In repairing this fracture, it was necessary to look for structural integrity of muscle attachments to this process which included the

Answer:
A. long head of the triceps.
B. teres major.
C. short head of the biceps.
D. deltoid.
E. pectoralis major.
Multiple Choice

Question: On examining a patient's wrist, shown below, you recognize that the area superficial to the flexor digitorum superficialis muscle is labeled.

Answer: A. 1
B. 2
C. 3
D. 4
E. 5
Question 14

Multiple Choice

Question: An Olympic skier fell and fractured the neck of the fibula and severed the nerve that winds around the fibular neck. As the team physician, which of the following signs/symptoms would you expect to find?

Answer:
- A. The foot is in a dorsiflexed position.
- B. The foot is in an everted position.
- C. There is loss of sensation on the dorsum of the foot.
- D. There is loss of sensation on the sole of the foot.
- E. The skier is unable to curl his toes.

Question 15

Multiple Choice

Question: A 10-year-old boy stepped on a broken bottle while playing in the park and suffered a deep cut. The emergency room physician observed that the boy had sensory loss on the lateral 1/3 of the sole of the foot. Which foot movements would he still be able to perform?

Answer:
- A. Abduction of the big toe
- B. Adduction of the big toe
- C. Abduction of the 3rd toe
- D. Adduction of the 3rd toe

Question 16

Multiple Choice

Question: Following the procedure to cannulate a vein lying just anterior to the medial malleolus, the patient complained of pain along the medial border of the foot. Which nerve might have been accidentally cut?

Answer:
- A. Sural nerve
- B. Saphenous nerve
- C. Superficial fibular (peroneal) nerve
- D. Medial plantar nerve
- E. Tibial nerve

Question 17

Multiple Choice

Question: The team's physician examined a 20-year-old college soccer player. The doctor placed him in the supine position. The doctor then asked him to abduct his right lower limb (against resistance). This tested which of the following muscles?

Answer:
- A. Piriformis
- B. Gluteus medius
- C. Semitendinosus
- D. Long head of the biceps femoris
- E. Vastus lateralis

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Multiple Choice 2.13 Points

Question: During hip replacement surgery on a 70-year-old woman, the orthopedic surgeon has to cut through the lateral rotators of the thigh to get to the hip joint. Which of the following muscles would probably not be affected during this procedure?

Answer:  
A. Tensor fasciae latae  
B. Obturator internus  
C. Piriformis  
D. Inferior gemellus  

Multiple Choice 2.13 Points

Question: A barefoot 5-year-old girl stepped on a nail while she was playing outside in her backyard. The nail pierced through the four layers of plantar muscles. Which muscle has a tendon in the fourth layer that helps support the longitudinal arch of the foot by passing from the lateral side of the foot to the medial side of the foot?

Answer:  
A. Flexor digitorum longus  
B. Tibialis anterior  
C. Tibialis posterior  
D. Fibularis (peroneus) longus  
E. Quadratus plantae  

Multiple Choice 2.13 Points

Question: Extension at the hip joint that occurs when climbing stairs is primarily a consequence of contraction of the

Answer:  
A. Adductor magnus muscle.  
B. Piriformis muscle.  
C. Short head of the biceps femoris muscle.  
D. Vastus intermedius muscle.  
E. Gluteus maximus muscle.  

Multiple Choice 2.13 Points

Question: While walking down the street on a warm summer day, you witness the final scenes of a mugging. When you arrive at the scene, you notice that the victim is bleeding profusely immediately inferior to the inguinal ligament. You confidently apply pressure to the severed vessel with your thumb at the location of the injury because you know that blood can reach the distal portions of the leg through anastomoses that could include the

Answer:  
A. Inferior gluteal, medial femoral circumflex, and the 1st perforating arteries.  
B. Superior gluteal, inferior gluteal, and obturator arteries.  
C. Inferior gluteal, obturator, and the 1st perforating arteries.  
D. Superficial external pudendal, superior gluteal, and lateral femoral circumflex arteries.  
E. Superficial circumflex iliac, lateral femoral circumflex, and obturator arteries.
Multiple Choice

Question: During surgery of the anterior compartment of the thigh, the surgeon encounters the femoral artery. You recall that all of the following statements concerning this vessel are correct EXCEPT that it

Answer: 
A. passes through the adductor hiatus to become the popliteal artery. 
B. travels between the adductor longus and adductor brevis muscles. 
C. gives rise to the profunda femoris artery (deep artery of thigh). 
D. is lateral to the femoral vein immediately below the inguinal ligament. 
E. gives rise to the superficial circumflex iliac artery.

Multiple Choice

Question: During surgery to repair a torn Achilles tendon, the surgeon clamps the posterior tibial artery. This artery

Answer: 
A. begins at the adductor hiatus. 
B. descends in the superficial posterior compartment of the leg 
C. travels with the deep fibular (peroneal) nerve. 
D. gives rise to the dorsalis pedis artery. 
E. gives rise to the fibular (peroneal) artery.

Multiple Choice

Question: A 53-year-old marathon runner hobbles into the emergency room complaining of extreme pain in the anterior portion of the leg. The attending physician suspects anterior compartment syndrome. To verify this, she would note the absence of a pulse in which of the following arteries?

Answer: 
A. Popliteal 
B. Femoral 
C. Dorsalis pedis 
D. Fibular (peroneal)

Multiple Choice

Question: Three weeks after a shoulder (glenohumeral) joint dislocation the following symptoms were observed: weakness in abduction of the arm and loss of the normal rounded contour of the shoulder. The most likely diagnosis is a lesion of the

Answer: 
A. upper and lower subscapular nerves. 
B. radial nerve. 
C. musculocutaneous nerve. 
D. axillary nerve. 
E. suprascapular nerve.
Question 20

Multiple Choice

Question: A patient has atrophy of the muscles of the thenar eminence of the hand. This condition can result from injury to the

Answer:
- A. deep branch of the ulnar nerve.
- B. superficial branch of radial nerve.
- C. palmar branch of the median nerve.
- D. recurrent branch of the median nerve
- E. dorsal branch of the ulnar nerve.

Question 21

Multiple Choice

Question: In a patient who suffered a stab wound that penetrated the proximal part of the brachioradialis muscle, the physician tested for loss of cutaneous sensation on the

Answer:
- A. palmar surface of the little finger.
- B. palmar surface of the index finger.
- C. palmar surface of the thumb.
- D. medial area of the dorsum of the hand.
- E. lateral area of the dorsum of the hand.

Question 22

Multiple Choice

Question: Upon examination of a 46-year-old man who has a deep cut in the palm of his hand, you find that he is unable to adduct his thumb. The nerve which has been severed is the

Answer:
- A. recurrent motor branch of the median nerve.
- B. superficial ulnar.
- C. deep ulnar.
- D. superficial radial.
- E. deep radial.

Question 23

Multiple Choice

Question: A 67-year-old man suffered ankylosing spondylitis with calcification and narrowing of the intervertebral foramen between C5 and C6. This condition severely compressed the dorsal root of C6. The resulting anesthesia could be demonstrated

Answer:
- A. at the upper surface of the shoulder
- B. at the tip of the little finger.
- C. in the axilla.
- D. at the tip of the thumb.
- E. in the middle of the palm.
Multiple Choice 2.13 Points

Question: During removal of a tumor confined to the popliteal fossa, the surgeon used a posterior midline approach. During the dissection, he identified all of the following structures in the fossa EXCEPT for

Answer: 
A. the popliteal artery.
B. lymph nodes.
C. the tibial nerve.
D. genicular arteries.
E. the great saphenous vein.

Multiple Choice 2.13 Points

Question: A 25-year-old man was brought to the emergency department following a gunshot accident. The surgeon removed pellets lodged in the patient's glutus medius muscle. While observing the surgery, you recall that all of the following structures pass through the lesser sciatic foramen EXCEPT for the

Answer: 
A. internal pudendal artery and vein.
B. tendon of the obturator internus muscle.
C. inferior gluteal artery and vein.
D. nerve to the obturator internus muscle.
E. pudendal nerve.

Multiple Choice 2.13 Points

Question: A 32-year-old woman was rushed to the emergency department following a gunshot wound to her thigh, which injured the contents of her femoral triangle. The surgeon recalled that the boundaries of the femoral triangle include all of the following structures EXCEPT for the

Answer: 
A. sartorius muscle.
B. inguinal ligament.
C. rectus femoris muscle.
D. adductor longus muscle.

Multiple Choice 2.13 Points

Question: Carpal tunnel syndrome is the result of compression of structures within the carpal tunnel at the wrist. Consequently, examination of an affected patient could reveal

Answer: 
A. atrophy of the interosseous muscles of the hand.
B. loss of sensation on the dorsum of the hand.
C. loss of sensation of the skin of the little finger.
D. weakness of the muscles in the thenar eminence.
E. atrophy of muscles in the hypothenar eminence.
Multiple Choice 2.13 Points

Question: During exploratory surgery of the anterior thigh, you observe all of the following structures in the adductor canal EXCEPT for the

Answer:
A. femoral artery.
B. saphenous nerve.
C. profundus femoris artery (deep artery of thigh)
D. femoral vein.
E. nerve to the vastus medialis muscle.

Multiple Choice 2.13 Points

Question: A phlebotomist examined a 28-year-old man's arms to determine the best site to draw blood from the basilic vein. She knew that the basilic vein

Answer:
A. originates from the lateral side of the dorsal venous arch.
B. empties directly into the subclavian vein.
C. lies in the deltopectoral groove for part of its course.
D. ascends on the lateral side of the arm.
E. usually pierces the brachial fascia in the middle of the arm.

Multiple Choice 2.13 Points

Question: The doctor is preparing to drain blood from under the nail of the right third digit of a 13-year-old girl. He knows that the blood supply to this area usually comes from digital branches of the

Answer:
A. deep palmar arterial arch.
B. superficial palmar arterial arch.
C. dorsal carpal arterial arch.
D. palmar arterial arch.
E. dorsal metacarpal arteries.

Multiple Choice 2.13 Points

Question: The repair of a wound required clamping the radial artery. The surgeon knew that all of the following statements about this artery are correct EXCEPT that it

Answer:
A. passes through the anatomical snuff-box.
B. constitutes the major blood supply to the deep palmar arch.
C. has an anastomotic connection at the elbow with a branch of the profunda brachii artery.
D. can be palpated lateral to the tendon of the flexor carpi radialis muscle.
E. lies between the brachioradialis and flexor digitorum profundus muscles.
Multiple Choice 2.13 Points

**Question:** A 93-year-old man has a tumor of the left coracoid process that completely compresses the axillary artery. During an examination of this patient, the physician observes a normal left radial arterial pulse. The physician knows that in this patient, blood reaches the radial artery via connections that include those between the

- A. thoracoacromial and supreme thoracic arteries.
- B. subscapular and posterior humeral circumflex arteries.
- C. suprascapular and subscapular arteries.
- D. subscapular and deep brachial arteries.
- E. anterior and posterior humeral circumflex arteries.

**Answer:**

- A. deep brachial artery.
- B. radial artery.
- C. ulnar artery.
- D. anterior interosseous artery.
- E. posterior interosseous artery.

Multiple Choice 2.13 Points

**Question:** The fangs of a dog pierced the bellies of the outcropping muscles. The surgeon knew that the primary blood supply to the outcropping muscles of the posterior forearm involves direct branches of the

- A. superior ulnar collateral.
- B. interosseous recurrent.
- C. inferior ulnar collateral.
- D. anterior interosseous.
- E. radial collateral.

**Answer:**

Multiple Choice 2.13 Points

**Question:** The brachial artery of a 28-year-old man was lacerated in the cubital fossa as a result of a fall from a tree onto a fence. The surgeon ligated the artery in the cubital fossa because he knew that multiple arteries allow for a collateral circulation around the elbow joint and include all of the following EXCEPT for the

- A. medial to the tendon of the flexor carpi radialis muscle.
- B. lateral to the tendon of the flexor carpi ulnaris muscle.
- C. lateral to the tendon of the flexor digitorum superficialis muscle.
- D. lateral to the tendon of the palmaris longus muscle.
- E. medial to the tendon of the abductor pollicis longus muscle.

**Answer:**

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Multiple Choice

Question: A 83-year-old woman was unable to move her arm and was diagnosed with a frozen shoulder. Suspecting inflammation of the subacromial bursa, her physician recalled that the subacromial bursa separates the acromion from the tendon of the

Answer:
A. teres major muscle.
B. teres minor muscle.
C. subscapularis muscle.
D. supraspinatus muscle.
E. infraspinatus muscle.

Multiple Choice

Question: A 28-year-old football player was hit from behind during a playoff game resulting in an injury to his left knee. Upon examination, the physician observed that the tibia moved excessively in an anterior direction in relation to the femur. Which of the following ligaments was most likely injured?

Answer:
A. Medial collateral
B. Anterior cruciate
C. Lateral collateral
D. Posterior cruciate
E. Patellar

Multiple Choice

Question: A UC basketball player says his shoulder seems to be popping out more often lately when he stretches to make a basket. All of the following statements pertaining to the shoulder joint are correct EXCEPT that

Answer:
A. the shoulder joint is a multiaxial ball and socket synovial joint.
B. dislocation of the head of the humerus usually occurs anteriorly/inferiorly.
C. the rotator cuff muscles, which help strengthen the joint, are all innervated by branches of the posterior cord of the brachial plexus.
D. the glenohumeral ligaments are thickenings of the anterior part of the fibrous capsule and help strengthen the joint.

Multiple Choice

Question: Based on basic principles of skeletal muscle innervation and rotation of the limbs, the gastrocnemius is innervated by the

Answer:
A. anterior division of ventral rami.
B. posterior division of ventral rami
C. anterior division of dorsal rami.
D. posterior division of dorsal rami.
Multiple Choice 2.13 Points

Question: As a physician of the mid-21st century, you are using advanced techniques to follow the development of an embryo. During early formation of the limbs, you note that the apical ectodermal ridges of all the limb buds are secreting fibroblast growth factor (FGF). However, after the limb buds have grown to approximately two-thirds of their typical length, you notice that the apical ectodermal ridge of the right upper limb bud no longer is secreting FGF. You expect that the fetus will develop without a(n)

Answer:
A. right shoulder region.
B. right elbow region.
C. right hand.
D. entire right upper limb.
E. obvious limb anomaly.

Multiple Choice 2.13 Points

Question: A newborn has a hand directly attached to the shoulder. This is best described as

Answer:
A. amelia.
B. ectromelia.
C. phocomelia.
D. meromelia.
E. hemimelia.

Answers:
1d2d3c4c5c6c7e8c9d10c11a12c13c14c15a16b17b18a19d20e21a22b23e24c25d26d27e28c29d30e31c32c33d34c35e36b37e38c39e40d41b42d43b44c45a46c47c

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