EXAM NUMBER:_____

STRUCTURAL BASIS OF MEDICAL PRACTICE
EXAM #6
[redacted]

PART I. Select the BEST response. (Place letter in the space provided.)
(2 points each)

1._____ The flexor retinaculum originates from all the following carpal bones EXCEPT:

A. scaphoid
B. triquentral
C. trapezium
D. pisiform
E. hamate

2 _____ This muscle abducts the hand:

A. flexor digitorum profundus (medial tendons)
B. extensor digiti minimi
C. flexor carpi ulnaris
D. flexor carpi radialis
E. flexor digitorum superficialis (medial tendons)

3. _____ A patient arrives at the Hershey Medical Center suffering from compression of a nerve. The patient has weakness of pronation and flexion of the index and middle fingers at the distal interphalangeal joints and an inability to form an "0" by touching the tip of the thumb to the tip of the index finger. What nerve has been compressed? No sensory deficit exists.

A. superficial branch of the radial nerve
B. recurrent branch of the median nerve
C. deep branch of the ulnar nerve
D. anterior interosseous branch of the median nerve
E. deep branch of the radial nerve

4. _____ A patient has been thrown from a motorcycle and experiences trauma to the upper limb. At the Hershey Medical Center you observe that the left arm of the patient hangs at his side because of a loss of abduction and weakness of flexion and lateral rotation of the glenohumeral joint. What else would you expect to observe in the patient?

A. altered sensation in skin in the medial aspect of the forearm
B. atrophy of the hypothenar eminence
C. weakness in the ability to protract the scapula
D. inability to abduct and adduct the fingers
E. weakness in supination

5. _____ A patient has a fracture of the surgical neck of the humerus. What muscle might be weakened?

A. latissimus dorsi
B. supraspinatus
C. teres minor
D. deltoid
E. biceps brachii

6. _____ Your patient suffers from progressive compression of the axillary artery posterior to the pectoralis minor. Collateral circulation develops, bypassing the blockage by way of the anastomosis between the suprascapular artery and what other artery?

A. dorsal scapula artery
B. profunda brachial artery
C. thoracoacromial artery
D. subscapular artery
E. radial artery

7. _____ A twenty-five year-old man was thrown while riding a bicycle in a race. He attempted to break his fall with an outstretched hand and suffered a fracture. At Hershey Medical Center's Emergency Room, an examination reveals an inability to extend the hand at the wrist.
What might have been the site of the fracture that caused the muscle weakness?

A. clavicle
B. scaphoid
C. styloid process of the radius
D. hook of the hamate
E. midshaft of the humerus

8. _____ In the patient in question 7, a hematoma develops in the area of the fracture. What blood vessel might have been also lacerated at the fracture site?

A. subscapular artery
B. ulnar artery
C. posterior circumflex humeral
D. profunda brachial artery (deep brachial artery)
E. radial artery

9. _____ This structure enters the hand anterior (superficial) to the flexor retinaculum:

A. flexor digitorum superficialis
B. flexor pollicis longus
C. median nerve
D. ulnar nerve
E. flexor digitorum profundus

10. _____ A 45 year-old woman is seen at the Hershey Medical Center Clinic complaining of pain radiating down the medial aspect of the left hand. She states that her left hand is weaker than her right hand. You note that her thenar and hypothenar eminences are smaller in the left hand compared with that of the right hand and her radial pulse is diminished on the left.
Compression of what neural structure might account for the patient's symptoms?

A. upper trunk of the brachial plexus
B. posterior cord of the brachial plexus
C. median nerve
D. lower trunk of the brachial plexus
E. ulnar nerve

11. _____ All the following are true concerning the radial nerve EXCEPT:

A. It lies in contact with the scaphoid bone in the anatomical snuff box.
B. It continues into the hand as the deep palmar arch.
C. It enters the palm between two heads of the first dorsal interosseus.
D. It lies medial to the tendon of flexor carpi radialis at the wrist.
E. It winds round the dorsum of the hand deep to the tendons of abductor pollicus longus and extensor pollicis brevis.

12. _____ This muscle would be paralyzed by division of the deep radial nerve.

A. brachioradialis
B. abductor pollicis longus
C. extensor carpi radialis longus
D. extensor digiroum
E. supinator

13. _____ Select finger to which no palmar interosseus inserts.

A. thumb
B. index
C. middle
D. ring
E. little

14. _____ The lumbricals:

A. originate from the tendons of flexor digitorum superficialis.
B. are all innervated by the median nerve.
C. extend the metacarpal-phalangeal joints.
D. flex the interphalangeal joints.
E. insert on the extensor expansion on the lateral side of the medial four fingers.

15. _____ Branches of the median nerve innervate all of the following EXCEPT:

A. abductor pollicis brevis
B. flexor pollicis brevis
C. abductor digiti minimi
D. opponens pollicis
E. palmar aspect of the lateral three and one-half fingers

16. _____ An articular disc separates the ulna from the:

A. hamate
B. triquetral
C. scaphoid
D. pisiform
E. capitate

17. _____ All the following is true of the elbow joint EXCEPT:

A. Its synovial membrane is continuous with that of the superior radioulnar joint.
B. The annular ligament surrounds but does not attach to the radius.
C. Extension is checked by the anterior part of the capsular ligament.
D. The ulnar nerve is closely associated with the medial ligament.
E. Rotation as well as flexion and extension occur at this joint.

18. _____ Which of the following movements do not occur at the wrist (radiocarpal joint)?

A. flexion
B. extension
C. rotation
D. abduction
E. adduction

19. _____ Which of the following muscles is not part of the rotator cuff?

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

20. _____ All of the following are true of the axillary nerve EXCEPT:

A. innervates teres minor
B. innervates deltoid
C. can be injured in downward dislocation of the shoulder joint
D. innervates skin over 1/2 of deltoid
E. passes through quadrilateral space

TRUE OR FALSE. MARK SPACE 1 IF TRUE and SPACE 2 IF FALSE. (1 point each)

21. _____ The ulnar nerve is composed of fibers from C8 and T1.

22. _____ The posterior cord of the brachial plexus lies lateral to the first part of the axillary artery.

SELECT THE BEST RESPONSE (2 points each)

23. _____ The most lateral structure in the cubital fossa is:

A. median nerve
B. biceps tendon
C. radial nerve
D. brachial artery
E. ulnar artery

24. _____ The brachial artery:

A. is a continuation of the subclavian artery
B. cannot be palpated
C. courses along the medial border of the biceps brachii
D. lies directly in contact with the shaft of the humerus
E. liies superficial to the bicipital aponeurosis

25. _____ The most lateral tendon passing deep to the extensor retinaculum at the wrist is:

A. extensor carpi radialis longus
B. abductor pollicis longus
C. extensor pollicus longus
D. extensor digitorum
E. extensor indicis

26. _____ The rotator cuff musculature forms a "force couple" with what muscle to maintain centering of the humeral head on the center of the glenoid with overhead positioning of the arm?

A. latissimus dorsi
B. deltoid
C. serratus anterior
D. biceps

27. _____ A 24-year-old female has a ganglion cyst at the spinoglenoid notch of the left shoulder resulting in compression of the suprascapular nerve. Electrodiagnostic studies should demonstrate an abnormality in which muscle(s)?

A. teres minor
B. supraspinatus
C. infraspinatus
D. supraspinatus and infraspinatus

28. _____ The suprascapular nerve most frequently arises from which nerve route?

A. C3
B. C4
C. C5
D. C6

Circle the correct answer or answers. (29-32 –may have one or more answers)

29. _____ Bowstringing or volar subluxation of the flexor tendons is prevented by which anatomical structure(s)?

A. flexor retinaculum
B. vincula of flexor tendons
C. Cleland's ligament
D. fibro-osseous tunnels-annular pulleys
E. dorsal blood supply of the tendons

30. _____ The intrinsic muscles of the hand are divided into three groups based on function and location: thenar, hypothenar, and the interosseous-lumbrical group. The lumbricals originate from the radial side of the flexor digitorum profundus tendons. The lumbricals are both median and ulnar innervated. Which of the following statements regarding innervation of the lumbricals is/are correct?

A. The lumbrical to the index finger is median innervated.
B. The lumbrical to the long finger is median innervated.
C. The lumbrical to the ring finger is median innervated.
D. The lumbrical to the small finger is ulnar innervated.
E. The lumbrical to the thumb is median innervated.

31. _____ Following nerve repair, return of nerve function proceeds from proximal to distal. The terminal muscle is the muscle with the most distal point of innervation by a motor nerve and as such is the last to reinnervate after nerve injury. Which of the following represent(s) appropriate pairs of terminal muscles with their motor nerves?

A. extensor indicis--radial nerve
B. flexor digitorum profundus small finger--ulnar nerve
C. abductor pollicis brevis--median nerve
D. first dorsal interosseous--ulnar nerve
E. pronator teres--median nerve

32. _____ Which of the following can be anatomic causes of carpal tunnel syndrome?

A. a ganglion under the flexor retinaculum
B. swelling of the flexor tendons
C. repetitive hand use
D. distal radius fractures
E. increased flexor tendon excursion

1. Define the boundaries of the axilla. (5 Points)

   Apex:

   Base:

   Anterior Wall:

   Posterior Wall:

   Medial Wall:

   Lateral Wall:

2. What muscles attach to the coracoid process, and do these muscles either originate or insert upon the coracoid process? (3 points)

3. Name all of the carpal bones (2 points)

4. Fill in the following chart describing the muscles of the rotator cuff. (5 points)

Muscle	Origin	Action	Insertion	Nerve

5. Define the parts of the axillary artery, and list the corresponding arterial branches that arise from each part. (5 Points)

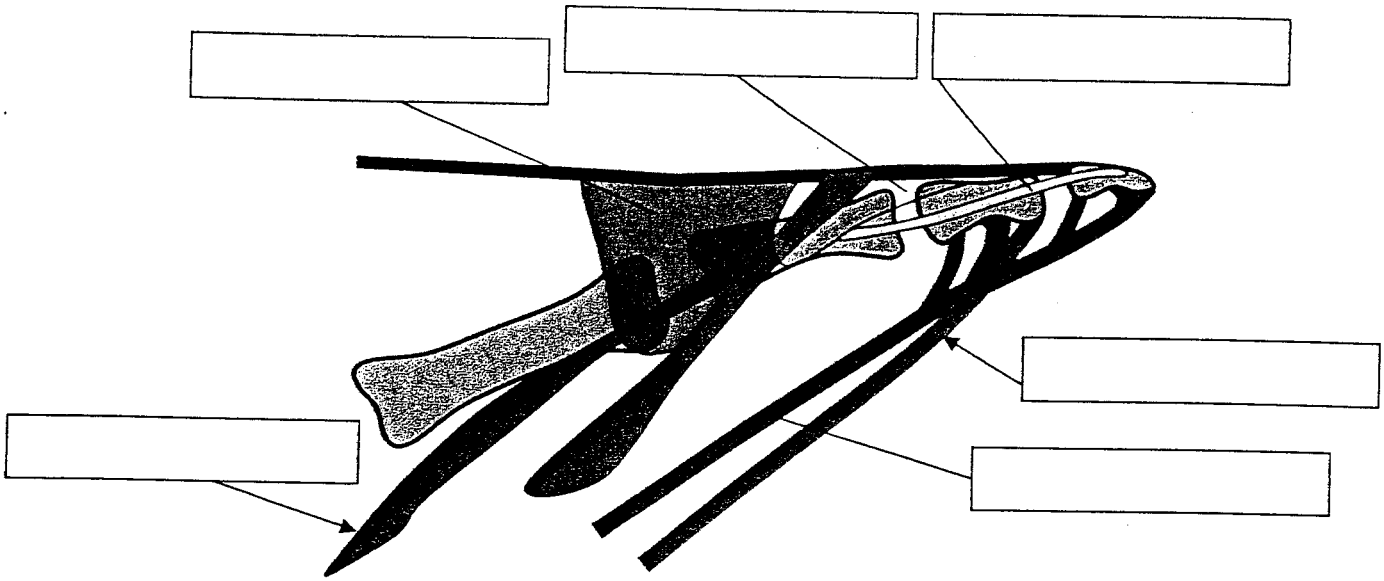
6. Name the three major nerves that cross into the forearm and the muscles through which they pass. (3 points)

7. What muscle(s) are capable of elevation/retraction (medial rotation) of the scapula? (1 point)

8. What muscle(s) are capable of flexion at both the elbow and wrist joints? (1 point)

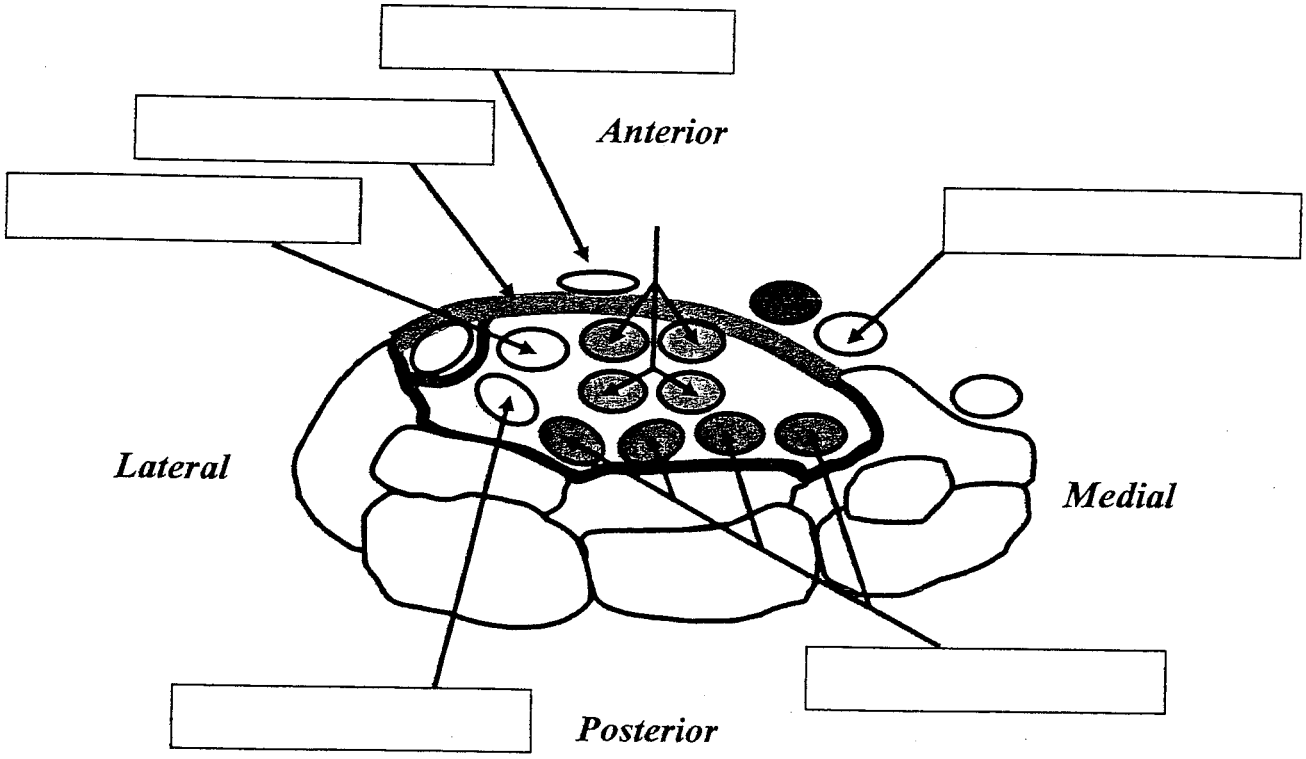
9. What muscle(s) are capable of extension at the elbow and wrist joints? (1 point)

10. Correctly label the following structures. (3 Points)



Side View

11. Correctly label the following structures. (3 Points)



13. Correctly label the following structures at the level of the mid-humerus. (3 Points)