CHAPTER 7: THE BIOMECHANICS OF THE HUMAN UPPER EXTREMITY

1. Scapulohumeral rhythm involves ______ of the scapula and ______ of the humerus.
   A. downward rotation, extension
   B. downward rotation, abduction
   C. upward rotation, abduction
   D. abduction, adduction

2. What is/are the purpose(s) of the scapula muscles?
   A. stabilize the scapula
   B. move the scapula
   C. to both stabilize and move the scapula
   D. none of the choices are purposes of the scapula muscles

3. Which of the following is not a rotator cuff muscle?
   A. teres major
   B. infraspinatus
   C. supraspinatus
   D. subscapularis
   E. all of the choices are rotator cuff muscles

4. Which of the following is true about the rotator cuff muscles?
   A. they work together with the deltoid for extension
   B. they work together to hold the head of humerus in glenoid fossa
   C. they work together both with the deltoid for extension and to hold the head of humerus in glenoid fossa
   D. none of the choices are true about the rotator cuff muscles

5. Which of the following secretes synovial fluid to lessen friction between soft tissues around joints?
   A. menisci
   B. articular cartilage
   C. bursae
   D. none of the choices are correct

6. Glenohumeral dislocations usually occur when the humerus is in which of the following positions?
   A. abducted
   B. externally rotated
   C. both abducted and externally rotated
   D. none of the choices are correct
7. Which scapula muscles perform as stabilizers during crutch walking?
   A. elevators
   B. depressors
   C. adductors
   D. abductors

8. Which scapula muscles perform as stabilizers during pushups?
   A. elevators
   B. depressors
   C. adductors
   D. abductors

9. Which of the following activities may promote the development of rotator cuff impingement syndrome?
   A. throwing
   B. swimming
   C. serving in tennis
   D. all of the choices may promote the development of rotator cuff impingement syndrome

10. The biceps brachii is strongest and most effective as an elbow flexor when the forearm is in what position?
    A. neutral
    B. supinated
    C. pronated
    D. does not matter

11. The brachialis is strongest and most effective as an elbow flexor when the forearm is in what position?
    A. neutral
    B. supinated
    C. pronated
    D. does not matter

12. To best isolate the brachialis (reduce the effectiveness of the other flexors), perform arm curls with the forearm in what position?
    A. neutral
    B. supinated
    C. pronated
    D. does not matter

13. Carpometacarpal joint 1 is what type of joint?
    A. hinge
    B. condyloid
    C. saddle
    D. none of the choices are correct
14. Carpometacarpal joints 2 - 5 are what type joints?
   A. hinge
   B. condyloid
   C. saddle
   D. none of the choices are correct

15. The interphalangeal joints are what type joints?
   A. hinge
   B. condyloid
   C. saddle
   D. none of the choices are correct

16. Metacarpophalangeal joints 2 - 5 are what type joints?
   A. hinge
   B. condyloid
   C. saddle
   D. none of the choices are correct

17. Overuse of the wrist extensors can cause what?
   A. tennis elbow
   B. lateral epicondylitis
   C. tendinitis
   D. all of the choices are correct

18. What muscles are most often associated with little leaguer's elbow?
   A. elbow extensors
   B. elbow flexors
   C. wrist extensors
   D. wrist flexors

19. The humeroulnar, humeroradial, and proximal radioulnar joints are the three articulations present at which joint?
   A. wrist
   B. elbow
   C. shoulder
   D. none of the choices are correct

20. Muscles on the anterior side of the arm produce flexion at which of the following?
   A. the shoulder
   B. the elbow
   C. the wrist
   D. all of the choices are correct
21. Which of the following factors provides stability at the elbow?
   A. the articulating bones
   B. ligaments
   C. both the articulating bones and the ligaments
   D. none of the choices are factors that provide stability at the elbow

22. Pronation and supination of the forearm occur at which of the following joints?
   A. proximal radioulnar joint
   B. distal radioulnar joint
   C. at the proximal radioulnar joint and the distal radioulnar joint
   D. none of the choices are correct

23. Which type of movement is permitted at the radiocarpal joint?
   A. sagittal plane motion
   B. circumduction
   C. frontal plane motion
   D. all of the choices are types of movement permitted at the radiocarpal joint

24. Movement of the hand at the wrist toward the thumb side of the arm (frontal plane) is known as which of the following?
   A. radial deviation
   B. ulnar deviation
   C. abduction
   D. adduction

25. The large range of movement of the thumb compared to that of the fingers is derived from the structure of which of the following?
   A. the thumb's carpometacarpal joint
   B. the thumb's intermetacarpal joint
   C. the thumb's metacarpophalangeal joint
   D. all of the choices are correct

26. Which joint in the body has the most range of motion?
   A. sternoclavicular
   B. acromioclavicular
   C. glenohumeral
   D. humeroulnar

27. Which of the following statements is true regarding ball and socket joints?
   A. They allow motion in all three planes
   B. They are triaxial.
   C. The glenohumeral joint is an example.
   D. They both allow motion in all three planes and are triaxial but the glenohumeral joint is not an example of one.
   E. all of the choices are correct
28. Which of the following muscles does not attach the scapula to the spine?
   A. levator scapula
   B. rhomboids
   C. trapezius
   D. deltoid

29. The acromion process is a landmark on which bone?
   A. scapula
   B. humerus
   C. clavicle
   D. sternum

30. Which of these muscles is not a mover of the humerus?
   A. biceps brachii
   B. coracobrachialis
   C. deltoid
   D. trapezius

31. Which of the following originates on the scapula?
   A. anterior deltoid
   B. pectoralis major
   C. biceps brachii
   D. latissimus dorsi

32. Muscles located where will cause flexion of the humerus?
   A. anterior to the longitudinal axis of the glenohumeral joint
   B. anterior to the mediolateral (frontal) axis of the glenohumeral joint
   C. superior to the anteroposterior axis of the glenohumeral joint
   D. anterior to the mediolateral (frontal) axis of the humeroulnar joint

33. Which of the following muscles is not an elbow flexor?
   A. biceps
   B. triceps
   C. brachioradialis
   D. brachialis

34. Where do the wrist flexors originate?
   A. medial epicondyle
   B. lateral epicondyle
   C. both the medial epicondyle and B
   D. depends on which one
35. Which of the following acts on more than 1 digit?
   A. abductor pollicis longus
   B. extensor indicis
   C. flexor digitorum profundus
   D. extensor digiti minimi

36. Throwing injuries to the elbow usually fall into which category?
   A. acute
   B. chronic
   C. both acute and chronic equally
   D. throwing does not cause injury to the elbow

37. Which muscles originate distal to the wrist and insert distal to the wrist?
   A. intrinsics
   B. extrensics
   C. elbow flexors
   D. elbow extensors

38. Which of the following groups are vulnerable to carpal tunnel syndrome?
   A. jobs requiring repeated forceful wrist flexion
   B. jobs requiring habitual resting of the arms on the palmar sides of the wrist
   C. skateboarders
   D. jobs requiring both repeated forceful wrist flexion and jobs requiring habitual resting of the arms on the palmar sides of the wrist
   E. all of the choices are correct

39. Opposition can occur where?
   A. CM 1
   B. CM 5
   C. MP 1
   D. both CM1 and CM5
   E. all of the choices are correct

40. Right-handed golfers will likely incur epicondylitis where?
   A. lateral epicondylitis on the left side
   B. lateral epicondylitis on the right side
   C. medial epicondylitis on the left side
   D. occurs with equal frequency on both sides of both arms