Chapter 02
The Musculoskeletal System: The Skeletal Framework and Its Movements

Multiple Choice Questions

1. The epiphyseal plate is:
A. the growth area of the long bones
B. the flat bone of the skull
C. the articular surface of a bone
D. the growth area of a flat bone

2. Which of the following joint types is biaxial?
A. ball and socket
B. hinge
C. condyloid
D. gliding

3. An example of a hinge joint would be the ___.
A. wrist
B. elbow
C. hips
D. acromioclavicular

4. Ligaments act to:
A. join muscle to bone
B. join bone to bone
C. cover the articular surface of the bone
D. provide articular lubrication

5. Which of the following is not a factor in range of motion?
A. joint structure
B. muscle bulk
C. ligamentous structures
D. segment length

6. Which plane divides the body into right and left halves?
A. frontal
B. sagittal
C. horizontal
D. cardinal

7. Which of the following illustrates motion in the frontal plane and around the AP axis?
A. an overhand throw
B. a bowling delivery
C. jumping jack exercises
D. a discus throw

8. Which of the following movements occurs in a horizontal plane around a vertical axis?
A. arm action in golf drive resulting in no spin ball
B. arm action in tennis forehand resulting in no spin
C. leg action in football, no spin
D. leg action in walking

9. Adduction refers to:
A. movement away from the midline of the body
B. movement toward the midline of the body
C. movement in two planes
D. reduction of joint angle

10. A reduction in joint angle is termed:
A. abduction
B. adduction
C. flexion
D. extension

11. What is circumduction?
A. combination of movements in two planes
B. combination of movements in three planes
C. movement about a longitudinal axis
D. movement of a segment in a circle

12. What is movement away from the midline of the body?
A. flexion
B. extension
C. adduction
D. abduction

13. What is action in which the sole of the foot moves away from anterior surface of the lower leg?
A. inversion
B. eversion
C. plantar flexion
D. dorsiflexion

14. Which of the following is correct?
A. abduction of the humerus--motion in a frontal plane about a vertical axis
B. flexion of the knee--motion in a sagittal plane about a biltaeral axis
C. forward tilt of the pelvis--motion in a frontal plane about an AP axis
D. rotation of the head--motion in a frontal plane about a longitudinal axis

15. Which of the following defines the center of gravity of the body?
A. intersection of cardinal sagittal and frontal planes
B. intersection of cardinal frontal and horizontal planes
C. intersection of cardinal sagittal and horizontal planes
D. intersection of all 3 cardinal planes

Short Answer Questions

16. Consider the motion of lifting one's foot up in preparation for placing it on a bench. Analyze the joint type, joint motion, plane and axis for movement in the ankle, knee, and hip joints:

	joint type	joint motion	plane and axis
ankle	hinge	dorsiflexion	sagittal, bilat
knee	hinge	flexion	sagittal, bilat
hip	ball socket	flexion	sagittal, bilat.

17. List three reasons why differences might exist among individuals in range of motion in the following motions. Justify your answers.

knee flexion and hyperextension
hip abduction and adduction
hip rotation

muscle or fat mass, muscle tension, injury, ligament tension

18. Name the joint actions involved at the ankle, knee, hip, shoulder, and elbow in the propulsion phase of a jumping jack exercise.

ankle plantar flexion, knee extension, hip extension, shoulder abduction

19. Discuss the reasons why it is inadvisable to have young children involved in activities that require hard contact or heavy resistance.

damage to epiphyseal areas of long bones

20. Name and discuss three factors that contribute to joint stability.

bony structure, ligaments, tendons, muscle & soft tissue