

Test Bank for Clinical Kinesiology and Anatomy 7th Lippert

CHAPTER 2 Biomechanics

Multiple Choice

Select the one best choice that completes the statement or answers the question.

1. Motion created by forces that incorporates factors of time, space, and mass of a moving system is described by which term?
 - a. Osteokinematics
 - b. Biomechanics
 - c. Mechanics
 - d. Kinematics
2. Shear forces occurring within a joint are:
 - a. Rolling
 - b. Gliding
 - c. Traction
 - d. Compression
3. A force that is not applied perpendicular to a limb segment produces a rotatory force and:
 - a. Bending
 - b. Force couple
 - c. Traction or compression
 - d. Shear or torsion
4. A scalar quantity describes what characteristic(s) of an object?
 - a. Velocity
 - b. Distance
 - c. Direction
 - d. Magnitude
5. A moment arm (MA) is the perpendicular distance between the application of a force and the:
 - a. Resistance
 - b. Axis
 - c. Magnitude
 - d. Pulley
6. Putting a wheelchair in motion, the individual must overcome which of Newton's laws of motion?
 - a. Law of action-reaction
 - b. Law of acceleration
 - c. Law of inertia
 - d. None of the above
7. When an object bends, which force occurs on the convex side?
 - a. Linear
 - b. Traction
 - c. Compression
 - d. Concurrent
8. A force that pushes body segments together creates:
 - a. Traction
 - b. Mobility
 - c. Distraction
 - d. Compression
9. A vector describes:
 - a. Speed and scalar
 - b. Area and mass
 - c. Mass and volume
 - d. Magnitude and direction

10. The upward force a supporting surface exerts on an individual when the individual pushes down on the supporting surface is termed:
- a. Ground reaction force
 - b. Counter force
 - c. Approximation
 - d. Friction
11. An individual is performing a push-up, and in the up position only the balls of his feet and his palm and fingers are in contact with the floor. What area is the base of support (BOS)?
- a. Area under balls of feet to top of head
 - b. Surface of body in contact with BOS in down position
 - c. Area between balls of feet to palms
 - d. Only area of balls of feet and palms
12. What is the effect of moving the line of gravity (LOG) to the edge of the base of support (BOS)?
- a. Increased stability
 - b. Increased mobility
 - c. No change in mobility
 - d. Decreased stability
13. The vector that represents the sum of the magnitude and directions of each individual vector is the:
- a. Resultant force
 - b. Linear force
 - c. Parallel force
 - d. Curvilinear force
14. Increasing the length of the force arm results in:
- a. Less resistance for the force to move
 - b. More resistance for the force to move
 - c. Less force needed to move resistance
 - d. More force needed to move resistance
15. Forces in the same plane and in the same or opposite directions are:
- a. Parallel forces
 - b. Angular forces
 - c. Perpendicular forces
 - d. Concurrent forces
16. Stability is increased by:
- a. Increasing the base of support (BOS) and raising the center of mass (COM)
 - b. Narrowing the BOS and lowering the COM
 - c. Increasing the BOS and lowering the COM
 - d. Narrowing the BOS and raising the COM
17. When resistance is between the axis and the force, which class of lever is created?
- a. First
 - b. Second
 - c. Third
 - d. None
18. Which motion do torsional forces create in a bone?
- a. Traction
 - b. Twisting
 - c. Compression
 - d. Rotation

19. A force couple is when muscles act together to produce:
- a. Clockwise or counterclockwise rotation
 - b. Clockwise or perpendicular rotation
 - c. Counterclockwise or perpendicular rotation
 - d. None of the above
20. When muscle tendons pass under a tuberosity of a bone resulting in a change in direction of the tendon, the tuberosity is acting as a/an:
- | | |
|-------------------|-----------|
| a. Inclined plane | c. Lever |
| b. Axle | d. Pulley |

CHAPTER 2 Biomechanics

Answer Section

1. ANS: D
2. ANS: B
3. ANS: C
4. ANS: D
5. ANS: B
6. ANS: C
7. ANS: B
8. ANS: D
9. ANS: D
10. ANS: A
11. ANS: C
12. ANS: D
13. ANS: A
14. ANS: C
15. ANS: A
16. ANS: C
17. ANS: B
18. ANS: B
19. ANS: A
20. ANS: D