REV-01
BPT/66/33/38

2023/12

SET B

BACHELOR OF PHYSIOTHERAPY
THIRD SEMESTER
BIOMECHANICS
BPT – 306

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

[Objective]

Time: 30 min. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. Specific function of Tarsal joint is:
   a. Protection
   b. Gives strength
   c. Acts as lever
   d. None of the above
2. Which ankle Ligament is the strongest ligament?
   a. Anterior Talofibular ligament
   b. Calcaneo Fibular ligament
   c. Posterior Talofibular ligament
   d. Deltoid Ligament
3. The ratio of GH movement to scapular movement through 180 degrees of abduction or flexion is
   a. 2:1
   b. 2:5
   c. 1:2
   d. 1:3
4. Sideways bending of trunk is an example of movement in
   a. Sagittal plane and sagittal axis
   b. Frontal plane and sagittal axis
   c. Sagittal plane and lateral axis
   d. Frontal plane and transverse axis
5. The Distance between successive contact points of opposite limbs
   a. Double Stance
   b. Step length
   c. Cadence
   d. Stride length
6. Centre of Gravity is Located at
   a. L2
   b. S2
   c. L5
   d. T12
7. Which Part of the Vertebrae bears the most weight?
   a. Lamina
   b. Superior articular facet
   c. Body
   d. Inferior articular facet
8. Unhappy triad consists of injury of
   a. ACL, Medial Meniscus, MCL
   b. ACL, PCL, Joint Capsule
   c. MCL, LCL, Patella Tendon
   d. None of the Above
9. Glenoid cavity articulates
   a. Clavicle with scapula
   b. Humerus with scapula
   c. Clavicle with acromion
   d. Scapula with acromion

10. The number of steps per minute completed per unit of time, usually given steps per minute.
    a. Step width
    b. Step length
    c. Stride length
    d. Cadence

11. Newton's second law of motion is also known as
    a. Law of inertia
    b. Law of action reaction
    c. Law of momentum
    d. Law of gravitation

12. Degeneration of spine is called?
    a. Spondylosis
    b. Spondylolysis
    c. Spondylolisthesis
    d. None of the Above

13. Which Muscle is involved in the elevation of forearm?
    a. Triceps
    b. Biceps
    c. Deltoid
    d. Tibialis Anterior

14. A common connective tissue layer holding together the skeletal muscle bundles is
    a. Aponeurosis
    b. Endomysium
    c. Fascia
    d. Perimysium

15. A therapist practices assessing joint end-feel. The therapist would most accurately classify normal elbow extension end-feel is
    a. Hard
    b. Firm
    c. Soft
    d. Empty

16. Slowly lowering the arm in the sagittal plane would use the ---------- muscle group
    a. 60-90 degree
    b. 90-120 degree
    c. 110-180 degree
    d. 120-180 degree

17. Force generation but the fiber lengthening is also known as:
    a. Eccentric contraction
    b. Isotonic contraction
    c. Isometric contraction
    d. Concentric contraction

18. Parallel force acting on between the two vertebrae of the Lumbar region is called?
    a. Compressions force
    b. Shear force
    c. Torsional Force
    d. Bending force

19. A therapist palpates the bony structures of the wrist and hand. Which of the following structures would not be identified in the distal row of carpals?
    a. Hamate
    b. Trapezoid
    c. Capitate
    d. Pisiform

20. Which Ligament limits C0-C2 spine extension?
    a. Alars Ligament
    b. Posterior Longitudinal Ligament
    c. Transverse ligament
    d. Interspinous ligament

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Descriptive

Time : 2 hrs. 30 min. Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain Gait cycle, Determinants of Gait? Also gives example of 2 abnormal gait. 4+4+2 =10

2. Describe the scapular movements that take place in AC joint? What are the roles of costoclavicular and interclavicular ligaments at the AC joint? 5+5=10

3. Describe the components and role of triangular fibrocartilage structure in wrist function? 5+5=10

4. Describe Cervical structure and function, both kinematics and Kinetics? 5+5=10

5. What is Q-angle? Define Locking and Unlocking mechanism of knee? 5+5=10

6. Explain how immobilization affects joint structure? Describe the load deformation curve? 5+5=10

7. Explain Subtalar Joint structure and function? Define Windlass Mechanism 5+5=10

8. Describe the articulation of elbow joint including the axes of motion and degrees of freedom? 5+5=10

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