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Barasat, Kolkata -700125

Term End Examination 2025-2026

Programme – B.Physiotherapy-2021/B.Physiotherapy-2022/B.Physiotherapy-2023/B.Physiotherapy-2024

Course Name – Biomechanics & Kinesiology I

Course Code - BPTC304

(Semester III)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Select the appropriate answer: The strongest ligament of vertebral column is
 - a) anterior longitudinal ligament
 - b) posterior longitudinal ligament
 - c) ligamentum flavum
 - d) interspinous ligament
- (ii) Complete the answer: Winging of scapula occurs with weakness in which muscles
 - a) levator scapulae
 - b) serratus anterior
 - c) rhomboids
 - d) subscapularis
- (iii) Select the correct answer: A forerarm laceration causes damage to the median nerve. Which muscle not innervated by the median nerve can flex the wrist
 - a) flexor carpi radialis
 - b) flexor carpi ulnaris
 - c) flexor digitorum superficialis
 - d) flexor longus
- (iv) Select the peptidoglycans present in the cartilage
 - a) ossein
 - b) chondrotin
 - c) cartilagin
 - d) casein
- (v) Identify the role of an antagonist muscle
 - a) acts opposite to agonist muscle
 - b) acts with the agonist muscle
 - c) limits a movement
 - d) produce a movement
- (vi) Identify which of the following is the largest segment of the movable part of the vertebral column
 - a) coccygeal
 - b) cervical
 - c) lumbar vertebra
 - d) thoracic
- (vii) Complete the following statement: The ratio of glenohumeral movement to scapular movement through 180 degree of abduction is
 - a) 1 is to 2
 - b) 2 is to 1

- c) 1 is to 3
(viii) Select the type of acromioclavicular joint
a) ball and socket
c) pivot
d) 4 is to 5
b) hinge
d) gliding
- (ix) Identify Which is not an anatomical pulley
a) FDP contraction
c) Hamstring contraction
b) Quadriceps contraction
d) Peroneal contraction
- (x) Interpret During forward reach, who used lumbar spine movement earlier
a) Males
c) Children
b) Females
d) Male & female equal
- (xi) Interpret Low back pain patient which muscle is an important contributor to the symptoms
a) Erector spine
c) Obliques
b) Iliopsoas
d) Hip extensors
- (xii) Identify the Second class lever will always have a lever arm
a) Equal to 1
c) Less than 1
b) More than 1
d) More than 2
- (xiii) Interpret The hip joint congruence is best in
a) Flexion, adduction and internal rotation
c) Extension, abduction & external rotation
b) Flexion, abduction & external rotation
d) Extension, adduction & internal rotation
- (xiv) Differentiate the factors by which The GTO is sensitive
a) muscle length
c) joint position
b) movement
d) muscle tension
- (xv) Distinguish the Fibers of the muscle spindle are called
a) intrafusal
c) supraspinal
b) extrafusal
d) propriospinal

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the significance of ligament of bigelow. (3)
3. Explain about the primary curve and secondary curve of vertebral column. (3)
4. Illustrate the axes of motion and planes during elbow flexion and extension. (3)
5. Name the muscle of forearm responsible for supination and pronation and , axis of rotation and plane with a diagram. (3)
6. Analyze the role of gravity in the rehabilitation of a patient who has experienced prolonged immobilization (3)

OR

Examine the effects of immobilization on the nervous system. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write about the Spurt and Shunt muscle and It's function with an example. (5)
8. Describe the condition called hallux valgus. (5)
9. Analyze why the acromioclavicular joint is more prone to injury during overhead activities. (5)
10. Describe the mobility & stability of elbow complex and its relationship to hand & wrist (5)
11. Analyze the advantage of a force acting on a lever with a mechanical advantage greater than 1. (5)
12. Analyze the mechanism called nutation and counter nutation of pelvis. (5)

OR

Analyze the reason for extension lack and extensor lag of knee.

(5)

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