



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

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

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) Differentiate The arthrokinematics of shoulder flexion is
- | | |
|--|---|
| a) Roll and slide along joints longitudinal diameter | b) Roll and slide along transverse diameter |
| c) Spin movement of articular surface | d) A roll of the articulating surface |
- (ii) Identify the Centre of gravity of adult human in the anatomical position is slightly
- | | |
|----------------------------|-----------------------------|
| a) Anterior to S1 vertebra | b) Posterior to S1 vertebra |
| c) Anterior to S2 vertebra | d) Posterior to S2 vertebra |
- (iii) Select The centre of gravity of adult human is at what % of person's height
- | | |
|---------|---------|
| a) 0.5 | b) 0.55 |
| c) 0.45 | d) 0.6 |
- (iv) Differentiate which is not a saddle joint?
- | | |
|-----------------------------|-----------------------|
| a) Carpometacarpal of thumb | b) Ankle |
| c) Sternoclavicular | d) Acromio clavicular |
- (v) Identify the Normal carrying angle
- | | |
|------------------|----------------|
| a) 0 – 20 degree | b) 0-30 degree |
| c) 0-10 degree | d) 0-40 degree |
- (vi) Identify the small carrying angle means there is a risk of _____
- | | |
|-------------------------|--------------------------|
| a) Inferior dislocation | b) Posterior dislocation |
| c) Superior dislocation | d) Anterior dislocation |
- (vii) Select The trabecular system is weak in the spine
- | | |
|---------------|------------------|
| a) Anteriorly | b) Posteriorly |
| c) Laterally | d) In the middle |
- (viii) Select the most important muscle to produce upwards rotation of the scapula
- | | |
|----------------------|--------------|
| a) Serratus anterior | b) Trapezius |
| c) Levator scapulae | d) Deltoid |
- (ix) Discover The primary contributor to the resistance to passive stretching is

- a) Cross bridges of myosin filament
- b) Titin
- c) Thixotrophy of muscle
- d) Stiffness of tendon
- (x) Interpret During forward reach _____ use lumbar spine movement earlier.
 - a) Males
 - b) Females
 - c) Children
 - d) Male & female equal
- (xi) Identify the Second class lever will always have a lever arm
 - a) Equal to 1
 - b) More than 1
 - c) Less than 1
 - d) More than 2
- (xii) Interpret In pulled elbow syndrome there is dislocation of
 - a) Radio-humeral joint
 - b) Radio-ulnar joint
 - c) Humero-ulnar joint
 - d) Wrist joint
- (xiii) Distinguish Hyaline cartilages are found in
 - a) IVD
 - b) Ears
 - c) Epiglottis
 - d) Joints
- (xiv) Interpret the Shear stress is more in
 - a) Coxa vara
 - b) Coxa valga
 - c) Femoral anteversion
 - d) Femoral retroversion
- (xv) Interpret the Delayed onset muscle soreness is most severe at
 - a) 5-10 hours
 - b) 10 – 30 hours
 - c) 30 – 45 hours
 - d) 45 – 60 hours

Group-B
(Short Answer Type Questions)

3 x 5=15

- 2. Write about the back extensors muscle. (3)
- 3. Write about types of collagen with an example. (3)
- 4. Explain about the creep phenomenon. (3)
- 5. Explain what is Hip Dysplasia. (3)
- 6. Explain how Q-angle is measured. (3)

OR

Explain the function of interosseous membrane. (3)

Group-C
(Long Answer Type Questions)

5 x 6=30

- 7. Define axes and planes. (5)
- 8. Explain the role of ligaments in providing stability of vertebral column. (5)
- 9. Write about the static stabilizers of the glenohumeral joint. (5)
- 10. Write about the Spurt and Shunt muscle and it's function with an example (5)
- 11. Evaluate the function of patella at the knee joint. (5)
- 12. Analyze the mechanism called nutation and counter nutation of pelvis. (5)

OR

Analyze the reason for extension lag and extensor lag of knee. (5)
