



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

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

Course Name – Biomechanics & Kinesiology - II

Course Code - BPTC401

(Semester IV)

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 stance phase of a gait cycle
 - a) it is the first 60% of the gait cycle and foot keeps ground contact
 - b) it is the first 40% of the gait cycle. foot keeps ground contact
 - c) it is the first 50% of the gait cycle. foot does not contact ground
 - d) it is the first 55% of the gait cycle. foot does not contact ground
- (ii) Name the nerve involved in foot drop gait
 - a) Sciatic
 - b) Femoral
 - c) Tibial
 - d) Common peroneal
- (iii) Match the following: Hand to knee gait
 - a) Poliomyelitis
 - b) Cerebral palsy
 - c) Erb's palsy
 - d) Parkinson disease
- (iv) Choose the appropriate answer and fill in the blank: Cadence is a _____ parameter of gait cycle
 - a) Spatial
 - b) Temporal
 - c) Constant
 - d) Independent
- (v) Identify the appropriate answer: Boutonniere deformity is
 - a) PIP flexion and DIP hyperextension
 - b) PIP hyperextension and DIP hyperflexion
 - c) PIP extension and DIP extension
 - d) PIP flexion and DIP flexion
- (vi) Trace the muscle which become weak in forward head posture
 - a) Cervical extensors
 - b) Cervical flexors
 - c) Cervical rotators
 - d) Cervical lateral flexors
- (vii) Identify the muscle responsible for foot drop gait
 - a) Tibialis anterior
 - b) Tibialis posterior

- c) Sartorius
(viii) Select the correct answer: Patella primarily work as an
a) Anatomical Lever
c) Base
(ix) Select the function of lateral collateral ligament
a) Resist valgus stress
c) Resist tibial anterior translation
(x) Complete the answer: Winging of scapula occurs with weakness in _____ muscles
a) Pectoralis
c) Serratus anterior
(xi) Identify which of the following is the largest segment of the movable part of the vertebral column
a) Coccygeal
c) Lumbar
(xii) Select the condition in which angle of inclination increases
a) Femoral retroversion
c) Coxa valga
(xiii) Name the condition seen due to bilateral lateral deviation of patella
a) Squinting patella
c) Grasshopper's eye patella
(xiv) Identify the nerve which is innervating wrist extensors
a) Median
c) Ulnar nerve
(xv) Select the correct option: Anterior pelvic tilting cause
a) Hip extension
c) Hip abduction
- d) Gracilis
b) Anatomical pulley
d) Torque
b) Resist varus stress
d) Resist tibial posterior translation
b) Latissimus dorsi
d) Teres major
b) Thoracic
d) Cervical
b) Femoral anteversion
d) Coxa vara
b) Patella alta
d) Patella Baja
b) Radial
d) Axillary
b) Hip flexion
d) Hip adduction

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define static and dynamic posture. (3)
3. Determine the arthrokinematics of knee joint complex (3)
4. Write a short note on extensor hood. (3)
5. Write a short note on supination twist. (3)
6. Contrast between isotonic and isometric muscle contraction. (3)

OR

Analyze about the close pack and open pack position of any joint (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Discuss the effect of ageing on human gait. (5)
8. Explain kinetics and kinematics of vertebral column. (5)
9. Illustrate nutation and counter-nutation. (5)
10. Explain structural and functional scoliosis and its angle (5)
11. Correlate the impact of pregnancy on the following structures: head, vertebral column, hip, knee and ankle. (5)
12. Explain in detail about GIRD syndrome. (5)

OR

Explain the biomechanical adaptations seen in thrower's shoulder. (5)