



Murugan

Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor of Physical Education Degree Examination – May 2023
IV Semester

Class: II B.P. Ed.

Time : 3 Hours
Max. Marks: 100

21BPDC25 Kinesiology and Biomechanics

Course Outcomes:

- CO1: Demonstrate and apply basic mechanical and physics principles to human movements and implements used in various sports
CO2: identify the relationship between anatomical structure, physiological function and mechanical principles as they relate to the performance of basic and complex motor skills
CO3: Explain the knowledge and appreciation of the importance of the study of kinesiology as a foundations for further studies biomechanics and performance analysis
CO4: Analyze sport movements and design movement oriented exercise prescriptions and view the performance analysis
CO5: Describe the methods used to achieve the goals of exercise and sports biomechanics

Part A

10 x 1 = 10

Choose the Correct Answer

1. Kinesiology refers CO1 K1
 - a. Study of movement
 - b. Study of human movement
 - c. Study of movement in sport
 - d. Study of movement of sportsman
2. When the angle of joint decreases the movement will be CO3 K2
 - a. Abduction
 - b. Adduction
 - c. Flexion
 - d. Extension
3. During walking, when the joints of knee and hip are flexed, the movement of ankle will be CO2 K3
 - a. Flexion
 - b. Extension
 - c. Hyper flexion
 - d. Hyper extension
4. Visualize the object from the anterior part, the planes of motion will be CO1 K3
 - a. Planes of motion
 - b. Sagittal plan
 - c. Frontal plan
 - d. Transverse plan
5. The plane of motion in which the upper part of the body only can be visualized is CO2 K2
 - a. Planes of motion
 - b. Sagittal plan
 - c. Frontal plan
 - d. Transverse plan
6. When the multipoint muscle is involved in the movement all joints will be CO3 K2
 - a. Same movement
 - b. opposite movement
 - c. Either same or opposite
 - d. None of these
7. Isometric contraction will take place when CO2 K2
 - a. Force is apply
 - b. Force is greater than resistance
 - c. Force is less than resistance
 - d. None of these
8. Isokinetic muscle contraction is possible on CO3 K3
 - a. Running in ground
 - b. Treadmill running
 - c. Weight lifting
 - d. Weight training
9. When the hand is away from the midline of the body, the movement will be CO4 K2
 - a. Adduction
 - b. Abduction
 - c. Flexion
 - d. Extension
10. The contraction in which the length of the muscle will not be changed CO3 K2
 - a. Isotonic
 - b. Isometric
 - c. Isokinetic
 - d. Static

Part B

5X6=30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Define meaning and definition of kinesiology. CO2 K1
(or)
11. b. Write shorts notes on centre of gravity and Line of gravity. CO3 K2
- 12.a. Explain the types of muscle contractions. CO2 K1
(or)
12. b. Write in brief the classification of joints. CO2 K1
13. a. Define force and its types. CO3 K1
(or)
- 13.b. Explain the types of lever. CO2 K3
- 14.a. Explain the speed and velocity. CO3 K2
(or)
14. b. Explain the angular distance and displacement. CO2 K1
15. a. Write about acceleration and its types. CO3 K2
(or)
- 15.b. Write short notes on inertia and friction. CO2 K1

Part C

5X12=60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Discuss in detail the need and importance of kinesiology and sports biomechanics. CO2 K1
to physical education teacher, athletes and sports coaches.
(or)
- 16.b. What is equilibrium and write about its types with suitable examples in sports? CO3 K2
- 17.a. Explain the meaning of posture and its types, importance of good posture. CO1 K3
(or)
17. b. Write the classification of muscles with examples. CO3 K2
18. a. Write about the newton's laws of motion with sports examples. CO2 K2
(or)
18. b. Define projectile and its factors influencing projectile trajectory. CO4 K4
- 19.a. Explain moment of inertia and couple force in details. CO2 K2
(or)
19. b. Explain the kinematics and kinetics in details. CO1 K1
20. a. Write about the mechanical analysis of running. CO2 K2
(or)
- 20.b. Write about the application of mechanical principles in sport. CO3 K4
