Bachelor of Physical Education Degree Examination – July 2020
II Semester

Class: II B.P. Ed.

Time : 2 Hours
Max. Marks : 50

18BPDC25 Kinesiology and Biomechanics

Course Outcomes:

CO1: Identify biomechanical, health, physiological and psychological limitations to interventions for improving physical performance
CO2: Analyse and explain the mechanisms underlying biomechanical, physiological and psychological changes that occur during after acute and chronic exercise.
CO3: Develop physical conditioning programs based on scientific principles designed to develop physical fitness and improve athletic performance
CO4: Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury
CO5: Know effectiveness of human movement using mechanical principles

Part A **10 x 1 = 10**

Choose the Correct Answer

1. The horizontal axis is also known as _____ axis. CO1 K1
   a. transverse b. elevation
   c. trunnion d. all of the above

2. Centert of gravity is located for the adult human in the anatomical standing position at CO1 K2
   a. umbilical level b. L2 level
   c. S2 level d. above umbilicus

3. The ideal angle of pull of a muscle on a bone to produce maximum torque at the joint is _____ degrees. CO2 K3
   a. 45 b. 60
   c. 90 d. 24

4. Amphiarthrosis joints have CO2 K2
   a. free movement b. no movement
   c. limited movement d. none is correct

5. Form of motion where an object moves in a bilaterally symmetrical, parabolic path. CO3 K5
   a. Projectile b. Centripetal
   c. Centrifugal d. Curve Linear

6. An example of first order lever in human body is _____ joint. CO3 K1
   a. sacro-Iliac b. ankle
   c. atlanto-occipital d. elbow

7. A tendency to do nothing or to remain unchanged is called CO4 K4
   a. friction b. mass
   c. inertia d. momentum

8. Angular acceleration is measured in CO4 K1
   a. rad/s^2 b. s^2/rad
   c. rad/s d. s/rad

9. Functional movements are of _____ types. CO5 K5
   a. 5 b. 3
   c. 12 d. 7

10. Body movements are of _____ types. CO5 K5
   a. 5 b. 12 c. 7 d. 3

Part B

3X6=18

Answer any three of the following

Each answer should not exceed 400 words or two pages

11. Discuss about center of gravity.	CO1 K2
12. Mention the importance of biomechanics for athletes.	CO1 K1
13. Mention the importance of good posture.	CO2 K1
14. Discuss reciprocal innervation.	CO2 K2
15. Write down the Newton's laws of motion.	CO3 K3
16. Mention the factors influencing projectile trajectory.	CO3 K1
17. What are inertia motion and mass?	CO4 K3
18. Brief out distance and displacement.	CO4 K4
19. Mention the fundamental movement skills.	CO5 K1
20. Mention the manipulative fundamental movement skills.	CO5 K2

Part C

2X11=22

Answer any two of the following

Each answer should not exceed 800 words or four pages

21. Explain the fundamental movements in shoulder joint.	CO1 K5
22. Interpret the terms axes and planes in relation to movements.	CO1 K6
23. Explain the types of muscular contractions with examples.	CO2 K5
24. Point out angle of pull and all (or) none law.	CO2 K4
25. Mention the application of levers in human joints with examples.	CO3 K1
26. What is force? Explain the types with examples.	CO3 K4
27. What are speed and velocity? Relate the both in displacement.	CO4 K4
28. Enumerate angular kinetics and relate with few examples.	CO4 K2
29. Analyze the fundamental movement principles in balancing.	CO5 K4
30. Analyze the fundamental movement principles in throwing and catching.	CO5 K4

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