Ex/CC-402/2025

Bachelor of Physical Education Examination - 2025

Department of Physical Education

2nd Year, 2nd Semester

Subject Code: CC-402

Kinesiology and Biomechanics

Time: Three Hours **Full Marks: 70**

Group-A

Answer any **three** questions **15×3=45**

1. Define Biomechanics and Sports Biomechanics. Make a list of the terminology of fundamental human movements. Explain about the various planes and axes of our body movements with examples. 3+3+9=15

2. Define static and dynamic posture with proper examples. Write the importance of good posture. Discuss any three common postural deformities and their correction through exercise. 2+5+8 =15

3. What is body lever? Describe different types of body lever with example. What is projectile motion? Describe different types of motion. 2+6+2+5=15

4. What is friction? Write down the factors affecting friction. Explain different types of friction with suitable sport examples. 4+3+8=15

5. What is kinetics and kinematics? Explain about the following kinematic and kinetic parameters with their units (any five) – a) mass, b) speed, c) acceleration, d) angular displacement, e) momentum, f) impulse, g) inertia 5+(2×5)=15

Group-B

Write short notes on any **two** of the following: **7.5×2=15**

a) Importance of Sport Biomechanics

b) Principles of stability

c) Centre of Gravity and Line of Gravity

d) All or None Law

Group-C

10. Answer **any ten** MCQ's : **1×10=10**

I. Anthropology is

(A) Study of bone (B) Study of joints (C) Study of muscle (D) Study of movement

II. The origin of a muscle is

(A) point of insertion into the bone

(B) The more movable site

(C) The less movable site, usually proximal site

(D) the point of nerve attachment to a muscle

III. Newton's 1st law of motion is also known as:

(A) Law of action and reaction (B) Law of conservation of energy

(C) Law of Acceleration (D) Law inertia

IV. The pubic symphysis is

(A) Synovial joint (B) Amphiarthrosis joint

(C) Synarthrosis joint (D) Diarthrosis joint

V. Mechanical advantage is always equal or greater than one in

(A) 1^{st} class lever (B) 2^{nd} class lever

(C) 3^{rd} class lever (D) None of these

VI. When the release height is greater than landing height, the optimum angle of release for greater horizontal distance is

(A) 45degree (B) Greater than 45degree

(C) Less than 45degree (D) None of these

VII. Bringing arms away from the midline of the body is an example of movement in the plane of

A) Transverse (B) Frontal (C) Sagittal (D) None of these

VIII. For covering 100m distance an athlete takes 1l seconds then what was the speed of that athlete?

(A) 9.09m/s (B) 9.90m/s (C) 9.009m/s (D) 9.19m/s

IX. Center of gravity of an object depends on it's

(A) Weight (B) Base of support (C) Height of CG (D) All the above

X. Mechanical advantage in lever is

(A) Distance object moved / Distance effort applied

(B) Distance effort applied / Distance object moved

(C) Distance effort applied x Distance object moved

(D) None

XI. Formula of pressure is

(A) P = F/A, where P is pressure, F is force and A is area

(B) P = ms, where P is pressure, m is mass and s is speed

(C) P = ma, where P is pressure, m is mass and a is acceleration

(D) P = m/v, where P is pressure, m is mass and v is velocity

XII. The area under a velocity-time graph represents...

(A) Displacement (B) Speed

(C) Acceleration (D) None.

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