BACHELOR OF PHYSICAL EDUCATION EXAMINATION, 2022

(2nd Year, 4th Semester)

Kinesiology and Biomechanics

PAPER - CC - 402

Time : Three hours | Full Marks : 70

Group - A

Answer any three questions: **15 x 3 = 45**

1. Define kinesiology and sports biomechanics. Briefly explain the scalar and vector quantity with example. Explain the center of gravity and line of gravity and their role in maintaining stability.4+4+7=15

2. Briefly explain about the various terminologies of fundamental human movement. Discuss about the various planes and axis of movements. 7+8=15

3. Discuss the role of kinesiology in sports. Classify muscle with example. Explain the synovial joint and their movements. 4+5+6=15

4. Define force. Explain the units and types of force. Establish the relationship among force, mass and acceleration. 2+10+5=15

5. Define kinetics and kinematics? Define the following terms.

   a) Inertia, b) Displacement, b) velocity, c) acceleration, d) angular speed, e) Momentum, f) couple 3+(2 X 6) =15

Group - B

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

6) Friction

7) Types and Importance of Posture

8) Lever and its types.

9) Projectile Motion

Group - C

10. Answer any ten Questions (put a tick against your answer): **1 X 10 =10**

I. **Sports biomechanics can be described as**

(A) Mechanics of sports

(B) Kinesiology

(C) Physics of sports

(D) Sports dynamics

II. Name of the movement in which the angle decreases between the two bones attached to a joint

(A) Abduction

(B)Adduction

(C)Flexion

(D)Extension

III. **The basic unit of contraction is the**

(A) Myosin

(B) Actin

(C) Z-Lines

(D) Sarcomeres

IV. Why it's importance to know biomechanics in sports

(A) Improve sports performance

(B)Prevent sports related injuries

(C) Both a and b

(D) None of these

V. Find the correct answer:

(A) Friction is a negative force for performance

(B) Friction is a positive force for performance

(C) Friction is negative as well as positive force for performance

(D) Friction does not have any influence on performance

VI. The golden rules of mechanics is

(A) Law of action and reaction;

(B)Law of conservation of energy;

(C) Force is the cause of motion

(D)None of the above

VII. Inertia is directly dependent on

(A) Mass

(B) Temperature

(C) Force

(D) All of these

VIII. Approach run is taken in jumping activities to increase

(A) Momentum

(B) Torque

(C) Friction

(D) Speed

IX. The S.I unit of force is/are

(A) Dyne

(B) Newton

(C) Both A and B

(D)Watt (W)

X. In performing sport activities most of the levers are

(A) 1st class lever

(B) 2nd class lever

(C)3rd class lever

(D) None of these

XI. Parabola is

(A) The path of an object projected into the free air

(B) Path of an object falling vertically down

(C) Path of an object formed with air resistance

(D) None of these

XII. Newton's first law of motion is also known as:

(A) Law of action and reaction;

(B) Law of conservation of energy;

(C) Law of inertia

(D) None of these