Master of Physical Education Examination 2022

1st year 2nd Semester

Sub: Sport Biomechanics and Kinesiology

Paper: MPCC-202

F.M. 70 Time: 3Hrs

Group - A

Answer the following questions (any three): 15X 3=45

1. What is meant by kinesiology and sports biomechanics? Describe two body movements with reference to plane and axis of the particular movement. Relate force, mass and acceleration. 4+6+5=15

2. What do you understand by origin and insertion of muscles? Write down the origin, insertion and action of any three major muscles of human body. 3+12=15

3. What is lever? Classify lever with the suitable mechanical and sport movement examples. Explain the mechanical advantage of Second-Class lever. 2+9+4=15

4. What is Projectile? Explain different projectile motions with relevant equations. Write down the principles of projectile motion. 2+9+4=15

5. What is meant by biomechanical analysis? Explain the importance of biomechanical analysis. Analyze any one fundamental movement in respect to biomechanics and kinesiology. 2+5+8=15

Group - B

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

6) Synovial Joint
7) Aerodynamics
8) Force and the principles of its application
9) Biomechanical analysis of any track or field event

Group - C

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

i. **Which of the following movements are fundamental to sport and exercise?**

(A) Walking, running, jumping, kicking

(B)Walking, rolling, jumping, bowling

(C)Lifting, running, jumping, throwing

(D)Walking, running, jumping, throwing

ii. Which of the following can never be treated as a hinge joint?
(A) The Elbow B) The Knee (C) The Interphalangeal joint (D) The Ankle

iii. A lever with an effort arm of 12 feet and a load arm of 2 feet would have a mechanical advantage of:
(A) 14 (B) 24 (C) 6 (D) 10

iv. Causal analysis of motion is called:

(A) Kinetics

(B) Statics

(C) Kinematics

(D) Dynamics

v. Newton's Third Law of Motion can be primarily used to explain:

(A) Running and jumping

(B) Throwing and catching

(C) Kicking and hitting

(D) Bowling and batting

vi. The motion of a pole vaulter in downward direction after clearing the bar is an example of

(A) Regular motion

(B) Regularly accelerated motion

(C) Decelerated motion

(D) Irregularly decelerated motion

vii. Abduction of wrist joint is also known as

(A) Ulnar flexion

(B) Radial flexion

(C) Pronation

(D) Supination

viii. Knee extension is caused by a number of muscles. Select the correct option:

(A) Vastusinternus, rectus femoris and biceps femories

(B) Biceps femoris, rectus abdominis, sartorius

(C) Vastusexternus, rectus femoris, vastusinternus

(D) Rectus femoris, rectus abdominis, biceps femoris

ix. Arrange the following phases of action of discus throw according to their sequence of execution from the code given below

I. Release action

II. Rotation

III. Release stance

IV. Preliminary swing

Codes:

(A) IV, II, III, I

(B) II, III, I, IV

(C) III, I, IV, II

(D) I, IV, II, III

x. The unit of linear acceleration is

(A) kg-m (B) m/s (C) m/s^2 (D) rad/s^2

xi. Two common types of curvilinear pathways are

(A) Angular and Circular

(B) Angular and Parabolic

(C) Circular and Rotary

(D) Rotary and Angular

xii. A train's speed was brought up from 3.5m/s to 8.5m/s within 2s. How much acceleration was for that train?

(A) 5.5m/s^2

(B) 5m/s^2

(C) 2.5m/s^2

(D) 2m/s^2