

2019

KINESIOLOGY AND BIOMECHANICS

Paper : CC – 402

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. (a) Explain the terms 'Kinesiology' and 'Sports Biomechanics'. Discuss the importance of Kinesiology and Sports Biomechanics in Physical Education and Sports Science. 5+10

Or,

- (b) What are the fundamental movements? What do you mean by Scalar and Vector quantities and equilibrium? 5+10

2. (a) Write down the importance of joints in human body. Discuss the different types of movement that can be performed at shoulder joint, wrist joint and ankle joint. 5+10

Or,

- (b) What are the different movements occurring in hip joint? Enlist the names of the muscles involved for each of the movements in hip joint. 5+10

3. (a) Discuss different types of force and their application to sports activities. 15

Or,

- (b) Describe different types of levers and their advantages with proper examples. 15

4. Write short notes on (*any two*): 7½×2

- (a) Centre of gravity
- (b) Importance of good posture
- (c) Frictional force
- (d) Angular displacement
- (e) Projectile motion.

Please Turn Over

5. Answer **any ten** MCQ from below and write the correct answers on the script :

1×10

- (a) The elbow joint is an example of which type synovial joint?
- (i) Pivot joint (ii) Ball and Socket joint
(iii) Hinge joint (iv) Saddle joint.
- (b) The muscle formed the rounded contour of the shoulder and helps in abduction, flexion and extension of shoulder joint is
- (i) Trapezius (ii) Pectoralis major
(iii) Deltoid (iv) Biceps brachii.
- (c) Following which is an example of isometric contraction?
- (i) Arm curl with barbell
(ii) Wrist curl with dumbbell
(iii) Pushing a concrete wall with straight hand
(iv) None of these.
- (d) When a joint moves and decrease the angle between the bones at the joint, the movement is called
- (i) Flexion (ii) Extension
(iii) Protraction (iv) Adduction.
- (e) A javelin moving in the air after throw, is an example of
- (i) a body in motion (ii) a body at rest
(iii) a body neither at rest nor in motion (iv) None of these.
- (f) The SI unit of force is
- (i) Newton (N) (ii) Dyne (D)
(iii) Poundal (P) (iv) None of these.
- (g) Which plane lies vertically and divides the body into right and left parts?
- (i) The sagittal plane (ii) The frontal plane
(iii) The transverse plane (iv) None of these.
- (h) The branch of classical mechanics which takes into account the causes for different motions of bodies, which can be forces or torques is termed as
- (i) Kinematics (ii) Kinetics
(iii) Dynamites (iv) None of these.

- (i) The shortest distance from the initial to the final position of a moving object is called
- (i) Distance
 - (ii) Displacement
 - (iii) Velocity
 - (iv) Speed.
- (j) The properties of resistance of any physical object to any change in its position and state of motion is termed as
- (i) Mass
 - (ii) Impulse
 - (iii) Friction
 - (iv) Inertia.
- (k) The path in the air in which the projectile travelled from release to land is known as
- (i) Range
 - (ii) Trajectory
 - (iii) Projection
 - (iv) None of these.
- (l) If a body covers equal distances in equal intervals of time, the motion is said to be
- (i) Oscillatory
 - (ii) Non-Uniform
 - (iii) Uniform
 - (iv) Rotatory.
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