

Seat No: _____

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF PHYSIOTHERAPY
BPT, Supplementary Examination, December-2017

Year: 1

Subject Code: 07101106

Subject Name: Biomechanics and Kinesiology - I

Date: 04/12/2017

Time: 10:00am to 12:00pm

Total Marks: 35

Instructions:

1. All questions are mandatory
2. Figures to the right indicate full marks.
3. Draw Diagram wherever necessary.
4. Write separate sections on separate answer sheets.

SECTION - A

Q.1 Describe osteo-kinetics and arthro-kinematics of GH joint with gleno-humeral rhythm. **(15)**

OR

Q.1 Describe ligaments of knee joint with their attachments and functions. **(15)**

Q.2 Write Short Notes. (any two) **(10)**

- (a) Functional position of hand complex & types of grip.
- (b) Mechanical advantage with examples of levers in human body.
- (c) Explain microstructure of muscle with the help of diagram.

SECTION – B

Q.3 Multiple Choice Question. (each 1 Mark) **(10)**

1. The branch of mechanics that describes the cause of force is

- (a) Kinetics
- (b) Kinematics
- (c) Biomechanics
- (d) Fluid mechanics

2. Newton's 2nd law of motion is called

- (a) Law of inertia
- (b) Law of action & reaction
- (c) Law of gravity
- (d) Law of acceleration

3. In Isometric contraction, the muscle

- (a) shortens
- (b) lengthens
- (c) neither shortens nor lengthens
- (d) shortens as well as lengthens

4. Which of the following planes divides the body into upper and lower parts

- (a) sagittal
- (b) transverse
- (c) frontal
- (d) vertical

5. In which type of levers, the weight is in between effort and fulcrum?

- (a) Type I
- (b) Type II
- (c) Type III
- (d) None of the above

6. The AP axis corresponds to

- (a) Sagittal plane
- (b) Transverse plane
- (c) Frontal plane
- (d) None of the above

7. In ideal human posture, the COG is situated at the lower border of

- (a) L-2
- (b) T -12
- (c) L-5
- (d) S-2

8. The term used to describe walking speed is

- (a) Cadence
- (b) Stride length
- (c) Gait
- (d) Period of nonsupport

9. A verbal cue that you could give a patient with poor balance to improve their gait safety is

- (a) increase cadence
- (b) decrease step length
- (c) increase width of the walking base
- (d) All of the above

10. Pressure on the vertebral discs is greatest in

- (a) supine position
- (b) side-lying
- (c) sitting
- (d) upright standing