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Rajiv Gandhi University of Health Sciences, Karnataka
I Year B.P.T. Degree Examination – Aug 2013

Time: Three Hours   **Max. Marks: 100 Marks**

BIO-MECHANICS
(Revised Scheme – 4)

Q.P. CODE: 2707

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two)   **2 x 10 = 20 Marks**

1. Describe the kinetics and kinematics of motion with relation to the shoulder joint.
2. Enumerate the various types of joints. Explain in detail each type giving examples.
3. Analyze the various types of grips and pinches. Describe the movement occurring at the joints.

SHORT ESSAYS (Answer any Twelve)   **12 x 5 = 60 Marks**

4. Explain Newton's 1st Law of motion with an example of from human body.
5. Describe the carrying angle and explain its importance for function of elbow and forearm.
6. Explain the phases of swing phase of a gait cycle.
7. Describe the movement of stair climbing.
8. Explain the joint movement that occurs during breathing.
9. *Analysis of movement from sitting to standing*
10. Explain the properties of bone tissue indicate the features that help maintain stability.
11. Describe the features of tonic and phasic muscles.
12. Define equilibrium; give the types with an example.
13. Describe the screw-home mechanism at the knee joint.
14. Explain the movements of facet joint of the vertebral column.
15. Explain passive insufficiency with examples.
16. Outline the various axis and planes of movement and give the movements that occur.
17. Explain the lever of 1st order and give an example of human movement.

SHORT ANSWERS   **10 x 2 = 20 Marks**

18. Define arthrokinematics.
19. *Give 2 uses of plantar arches.*
20. Define step length and stride length.
21. *Define Mechanical Advantage with an example*
22. Explain good posture.
23. Where does line gravity pass through in the spine?
24. Define Hooke's law.
25. Give 2 functions of a connective tissue.
26. Explain Q angle.
27. What is a closed packed position?

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