Rajiv Gandhi University of Health Sciences, Karnataka
I Year B.P.T. Degree Examination − April-2014

Time: Three Hours   **Max. Marks: 80 Marks**

BIOMECHANICS (RS-3)
Q.P. CODE: 2704

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

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

1. What is difference between osteokinematics and arthrokinematics? Describe the arthrokinematics and osteokinematics at the shoulder joint
2. Explain various types of power and precision grips with muscle action and joint position
3. What are the temporal and spatial parameters of gait? Describe the kinematics and kinetics of stance phase of gait cycle

SHORT ESSAYS (Answer any Eight)   **8 x 5 = 40 Marks**

4. Explain the Newton's laws of motion with examples
5. What is mechanical advantage? Explain mechanical advantage in relation to pulleys
6. What are the factors affecting muscle function? Add a note on shunt and spurt muscles
7. Define lever, discuss its application in physiotherapy
8. Define passive insufficiency. Explain in detail with appropriate examples
9. Write a note on open and closed kinematic chain exercises with appropriate examples
10. Define posture, discuss normal and abnormal postures
11. Explain the mechanics of rib cage movement during inspiration
12. Explain the gleno-humeral rhythm
13. Describe the various walking aids used in rehabilitation

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

14. Pes planus
15. Define torque
16. Ground reaction force
17. Carrying angle
18. Angle of pull
19. Define eleasticity
20. Q-angle
21. Isometric exercises
22. Hooke's law
23. Scoliosis

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