

# Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – Sep 2012

**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. Discuss the biomechanics of ankle joint
2. What is a lever? Explain the various types of levers with examples and add a note on application of levers in physiotherapy
3. Define posture. Discuss postural reflex and explain the various postural deviations of spine

#### 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 centre of gravity, base of support, line of gravity
8. Define active insufficiency. Explain in detail with appropriate examples
9. Write a note on open and closed kinematic chain exercises with appropriate examples
10. List out various gait deviations. Discuss any two in detail
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 cavus
15. Define torque
16. Ground reaction force
17. Carrying angle
18. Angle of pull
19. Young's modulus
20. Q-Angle
21. Isometric exercises
22. Flat back posture
23. Scoliosis

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