

# Rajiv Gandhi University of Health Sciences, Karnataka

## I Year B.P.T. Degree Examination – September 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. Define gait and gait cycle. Describe the kinetics of stance phase of gait.
2. Discuss in detail dynamic stability of Gleno-humeral joint.
3. Write in detail the formation of arches in hand with its functions.

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

4. Define Equilibrium? Discuss types of equilibrium with examples
5. Explain in detail the mechanism of muscle contraction
6. Define Joint? Classify with examples & add a note on features of the synovial joints
7. Explain the orders of lever with examples in human body and also role of levers in physiotherapy
8. Explain the structure of typical lumbar vertebrae. Add a note on function of the lumbar spine.
9. Write extensor mechanism of hand and add a note on its function
10. Brief out weight bearing of hip joint & Explain the muscle function in unilateral stance with example.
11. Describe the biomechanics of elbow joint.
12. Write in detail the extensor mechanism of knee? Mention the ligaments of the knee.
13. Define therapeutic gymnasium. Explain the mechanical principles of  
a) Shoulder Wheel b) Treadmill

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

14. What is index plus minus foot
15. What is tonic & phasic muscle
16. What is equilibrium?
17. Moment arm of force
18. Carpal tunnel syndrome
19. What are force systems?
20. Carrying angle & its importance
21. Gluteus medius gait
22. Define and give example for concurrent system of force
23. Anatomical pulley

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