

**Rajiv Gandhi University of Health Sciences, Karnataka**  
**I Year B.P.T Degree Examination – 11-May-2026**

**Time: Three Hours**

**Max. Marks: 100 Marks**

**BIO-MECHANICS (RS5)**

**Q.P. CODE: 2734**

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

**LONG ESSAYS (Second Question Choice)**

**2 x 10 = 20 Marks**

1. What is the difference between power and precision grip? Explain any two power grips in detail.
2. Define joint. Write in detail joint classification with examples.

**OR**

Explain in detail kinetics and kinematics of gait.

**SHORT ESSAYS (Question No 3 & 12 choice)**

**10 x 5 = 50 Marks**

3. Explain the kinematics of sternoclavicular joint.
4. Length – tension relationship
5. Explain stair gait.
6. Write the variations seen between cervical and lumbar vertebrae.
7. Define pennation. Write a note on types of pennation.
8. Explain the pelvic movements.
9. Describe sliding filament theory.
10. Add a note on arthrokinematics and osteokinematics with example.
11. Explain in detail the muscles responsible for ventilation.
12. Describe the advantage of using cane on contralateral side.

**OR**

What are the types of muscles? Explain tonic and phasic muscles.

**SHORT ANSWERS**

**10 x 3 = 30 Marks**

13. What is Motor unit?
14. What are the movements of 1<sup>st</sup> carpometacarpal joint?
15. What is ligament of Bigelow?
16. Add a note on advantage of Glenoid labrum.
17. Describe in short anterior cruciate ligament.
18. What is odd facet?
19. What is Pes cavus?
20. Describe in short zygapophyseal joint.
21. What are the axis and planes for knee joint movements?
22. What are the rotator cuff muscles of shoulder joint?

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