

**Second Year BPT Degree Supplementary Examinations - September 2014
(2010 Scheme)**

BIOMECHANICS

Time : 3 hrs

Max marks : 100

- Answer all questions
- Draw diagrams wherever necessary

Essays

(2x10=20)

1. Explain different types of power and precision grip with muscle action and joint position
2. Explain in detail the hip joint forces and muscle function in unilateral and bilateral stance

Short notes

(10x5=50)

3. Explain the lumbo-pelvic rhythm
4. Explain the effects of immobilization on ligament, tendon and bone
5. What are the components of muscle tension. Explain the length- tension relationship
6. Compare squat lifting with stoop lifting
7. Explain the kinematics of rib cage during ventilation
8. Name and describe the motions present in the temporomandibular joint
9. Which muscles contribute to dynamic stabilization of the glenohumeral joint. Briefly describe its role in dynamic stabilization.
10. Describe the arches of the hand with diagrams and mention any two functions
11. Explain the young's modulus of elasticity with an example
12. Explain the biomechanical role of inter vertebral disc

Answer briefly

(10x3=30)

13. What is carrying angle and give its range
14. What is equilibrium and mention its types.
15. Cylindrical grip
16. Cross-eyed patella
17. Supination twist of the foot
18. Q-angle
19. Trabecular systems of the head and neck of femur
20. Functional position of wrist and hand
21. Triangular fibro cartilage complex of wrist
22. Explain creep with a diagram
