

**VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM
(Deemed to be University)**

**BACHELOR OF PHYSIOTHERAPY DEGREE EXAMINATION
February 2020
Second Year**

BIOMECHANICS AND KINESIOLOGY

Time: Three hours

Maximum: 100 Marks

Answer **ALL** questions.

I. ESSAY: (2 x 20 = 40)

1. Describe why using a cane on the side opposite to hip joint pain or weakness is more effective than using the cane on the same side.
2. Explain in detail the phases of the gait cycle with suitable diagram. Add a note on determinants of gait.

II. SHORT NOTES: (8 x 5 = 40)

3. Describe the screw-home mechanism at knee joint.
4. Gravity and its uses in therapeutics.
5. Explain the structure and function of plantar aponeurosis.
6. Weight transference in single stance.
7. Describe the relationship between the zygapophyseal joints and the interbody joints of vertebral column
8. What is 'Q' angle of knee joint? How is it measured and what implications does it have for patellofemoral problems?
9. Codman's paradox.
10. Excitation – contraction coupling.

III. SHORT ANSWERS: (10 x 2 = 20)

11. Write the difference between tonic and phasic muscles.
12. Bunnell's sign.
13. Pars interarticularis.
14. Write any three functions of connective tissue.
15. What are the changes occur in IVD under compression loading.
16. Nutation and Counter – nutation.
17. Index plus minus foot.
18. Grosshopper eyed patella.
19. Vincula tendinum.
20. Gluteus medius gait.
