[LK 0217] FEBRUARY 2017 **Sub. Code :2415**

B.Sc. PROSTHETICS AND ORTHOTICS
SECOND YEAR
PAPER V – BIO-MECHANICS - II

Q.P. Code: 802415

Time: Three Hours **Maximum : 100 Marks**

Answer All questions

I. Elaborate on: **(3 x 10 = 30)**

1. With Neat labeled sketches describe the Biomechanics of Ischial Containment Socket Design?
2. Discuss the Biomechanics of walking with above knee prosthesis of any design.
3. Classify Pathological Gait. Explain the components of Hemiplegic Gait.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the biomechanics of knee locking.
2. How Torsional stresses are minimized in lower limb prosthesis?
3. Outline determinants of Gait.
4. How center of Gravity shifts in a Trendelenberg Gait?
5. Write a note on Parkinson's Gait.
6. Biomechanics of Safety knee joint.
7. Classify Prosthetic Knee Actuators.
8. Explain KAFO as a Mechanical System.

III. Short answers on: **(10 x 3 = 30)**

1. What are the various Loading patterns on Prosthetic Pylon?
2. How Frictional loading on stump-socket interfaces can be minimized?
3. What do you mean by Five point Pressure system?
4. What are the disadvantages of knee Drop lock in a KAFO?
5. State the mechanics of heel Wedges.
6. What are the advantages of Pyramid Alignment system?
7. Explain Bony Lock Mechanism in Ischial containment socket.
8. What do understand by term Pelvic Obliquity?
9. Explain the working principle of Ratchet locking pin of Silicone Liner.
10. A person walking with a constant speed of 5400 steps in one hour calculate his cadence?

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