

**BACHELOR IN PROSTHETICS & 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. What is transfemoral amputation? Describe suitable prosthesis with socket design.
2. What is gait analysis? Explain different type of gait analysis with neat sketches. Describe different stages of normal gait.
3. Describe the biomechanics of through knee prosthesis.

**Write notes on:**

**(8 x 5 = 40)**

1. PTB Socket.
2. Biomechanics and kinesiology.
3. Mechanics and Biomechanics.
4. Moment and torque.
5. Phantom pain.
6. SMO.
7. Explain terminal impact, abducted gait and lateral trunk bending.
8. Explain biomechanical principle of quadrilateral socket design.

**III. Short answers on:**

**(10 x 3 = 30)**

1. What do you mean by five point pressure system?
2. Locking and unlocking mechanism of knee.
3. Knee Orthosis.
4. Syme's prosthesis.
5. FRO.
6. Characteristics of Normal gait.
7. Bench alignment in knee prosthesis.
8. Flat foot.
9. Abnormal gait due to quadriceps muscle.
10. AFO.

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