

[AHS 0321]

MARCH 2021

Sub. Code: 2464

(AUGUST 2020 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS**SECOND YEAR (Regulation 2017-2018)****PAPER IV – BIOMECHANICS - II***Q.P. Code : 802464***Time: Three hours****Answer ALL Questions****Maximum: 100 Marks****I. Elaborate on:****(3 x 10 = 30)**

1. Explain about effects of Floor Reaction Orthosis in CP children.
2. Explain about instantaneous centre of rotation in prosthetic polycentric knee joint.
3. Explain about Through knee biomechanics and alignment techniques.

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

1. Explain about medial whip and lateral whip with causing factors.
2. Explain about joint forces during swing and stance phases.
3. Biomechanics of prosthetic hip joint.
4. Biomechanics of HKAFO.
5. Biomechanics of energy storing foot.
6. Explain about Types of orthotic hip joint.
7. Kinematics of anatomical knee joint.
8. Placement of COG in Trendelenburg gait.

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

1. Torsional stress.
2. Biomechanics of safety knee joint.
3. Explain about cadence and velocity in gait.
4. How Transfemoral prosthesis aligned for voluntary control of knee?
5. What are the advantages of carbon fibre in KAFO?
6. Step length and stride length.
7. What is three point and four point gait?
8. Why the abduction tendency more common in trans femoral stump?
9. Vaulting.
10. Energetics of walking.
