

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123]

NOVEMBER 2023

Sub. Code: 2455

BACHELOR IN PROSTHETICS AND ORTHOTICS

FIRST YEAR (Regulation 2017-2018 onwards)

PAPER V – BIOMECHANICS I

Q.P. Code: 802455

Time: Three Hours

Answer All questions

Maximum : 100 Marks

I. Elaborate on :

(3X10=30)

1. Discuss mechanical principles governing human motion.
2. Discuss General properties of the Connective tissues.
3. Discuss complexity of Human joint design.

II. Write Notes on :

(8X5=40)

1. Biomechanics of the Foot.
2. Biomechanics of the ankle foot Orthosis.
3. Biomechanics of the below knee (trans tibial) Prosthesis.
4. Concepts of differentiation and integration.
5. Distinguish between Concurrent force systems and Parallel force systems.
6. Bone Modeling and Remodeling.
7. Ground Reaction Force (GFR).
8. Stride and Temporal Parameters.

III. Short Answers on :

(10X3=30)

1. Cartilage.
2. Ligament.
3. Tendon.
4. Bursa.
5. Synovial fluid.
6. Meniscus.
7. Physiological Work.
8. Moment arm of force.
9. Force of friction.
10. Direction of Motion.
