No. of Printed Pages: 2 *Roll No.....*

JAMIA HAMDARD
DEPARTMENT OF PHYSIOTHERAPY
SCHOOL OF NURSING SCIENCES & ALLIED HEALTH

MPT 2nd YEAR (ALL SPECIALTIES), ANNUAL EXAMINATION, MAY 2024
BIOMECHANICS AND KINESIOLOGY (THEORY)
PAPER CODE: MTC/M/N/S – 262

Time: 3 Hours *Maximum Marks: 75 Marks*

(Write your Roll No. on top of the paper immediately)

All sections are compulsory. Draw diagrams wherever necessary. Give examples wherever necessary.

SECTION – A

Answer any ***FIVE*** of the following: **(5 × 5 Marks = 25 Marks)**

Q1. Lubrication of Articular Cartilage

Q2. Describe the structure and arthrokinematics of Apophyseal joints.

Q3. Biomechanical considerations of open and closed chain exercises in knee rehabilitation.

Q4. Role of EMG in biomechanics

Q5. Describe the classification of injury mechanisms in detail

Q6. Pathomechanics of forward head posture

Q7. Explain the use of cane in load distribution.

SECTION - B

Answer any ***TWO*** of the following: **(2 × 10 Marks = 20 Marks)**

Q1. Define Prehension. What are the various forms of prehension? Explain the muscular biomechanics of different forms of power grip.

Q2. Describe the chemical composition of bone. Explain the biomechanical properties and behaviour of bone under various modes of loading.

Q3. Describe in detail the static and dynamic stabilizers of shoulder joint.

SECTION - C

Answer any *TWO* of the following: **(2 × 15 Marks = 30 Marks)**

Q1. Define phases of Gait Cycle. Describe the kinematics and kinetics Gait Cycle? What are the various methods of analysis of gait.

Q2. Describe the composition of a tendon. Explain the Biomechanical properties of ligaments and tendons and the factors affecting the properties in detail.

Q3. Explain the Osteokinematics and arthrokinematics of Subtalar Joint. Joint. Mention the function of capsule and ligaments supporting the joint in detail. Describe the anatomy and function of extrinsic muscles ankle complex.

*****