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

[MD 0524] **MAY 2024** **Sub. Code: 4054**

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER II – PRINCIPLES AND PRACTICE OF PHYSICAL MEDICINE: AND REHABILITATION MANAGEMENT OF MUSCULOSKELETAL CONDITIONS

Q.P. Code: 204054

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

I. Elaborate on: **(2 x 15 = 30)**

1. An 8-year-old male child has had difficulty walking since 4 years of age. Sibling has a similar history. At presentation, he can walk 400m, has equines, requires assistance for toilet activities, Gower sign is positive. Discuss the diagnosis, management and Rehabilitation.

2. Describe clinical features, evaluation and management of Rheumatoid Arthritis.

II. Write notes on: **(10 x 7 = 70)**

1. Post-polio syndrome.
2. Hallmarks of denervation on EMG.
3. Aerobic exercise program.
4. Neck and upper back myofascial pain.
5. Augmentative and alternative communication.
6. Overuse injury.
7. Deleterious effects of prolonged immobilization.
8. Radiographic hallmarks of osteoarthritis knee.
9. Functional Electric Stimulation.
10. Kinetic Chain exercises.

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

[MD 1224] **DECEMBER 2024** **Sub. Code: 4054**

(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER II – PRINCIPLES AND PRACTICE OF PHYSICAL MEDICINE: AND REHABILITATION MANAGEMENT OF MUSCULOSKELETAL CONDITIONS

Q.P. Code: 204054

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

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss risk factors associated with the conditions causing restrictions in doing ADL for 80-year-old women.

2. Discuss the predisposing factors contributing to overuse injuries in sports. Discuss prevention and management of shoulder injuries among cricket bowlers.

II. Write notes on: **(10 x 7 = 70)**

1. Muscle power testing of tibialis anterior. Add a note on how to isolate it from tibialis posterior action.
2. Enumerate opioid receptors. Mention two agonists, two partial agonists, two antagonists and two neuropeptides acting at opioid receptors.
3. Iliotibial band – Anatomy, testing, and deformities caused due to tight iliotibial band.
4. Arches of the foot.
5. Inman's six determinants of gait.
6. Seddon’s classification of nerve injury.
7. Ganglion cysts.
8. Acute management of soft tissue injury.
9. Subscapularis tendinopathy.
10. Corns and calluses of foot.

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

[MD 0525] **MAY 2025** **Sub. Code: 4054**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER II – PRINCIPLES AND PRACTICE OF PHYSICAL MEDICINE: AND REHABILITATION MANAGEMENT OF MUSCULOSKELETAL CONDITIONS

Q.P. Code: 204054

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

I. Elaborate on: **(2 x 15 = 30)**

1. Discuss degenerative musculoskeletal diseases affecting a middle-aged active labourer. What are the strategies to prevent it from early adulthood?

2. Discuss the pathogenesis and pathology of Haemophilic arthropathy. Discuss in detail the prevention and management of knee flexion deformity.

II. Write notes on: **(10 x 7 = 70)**

1. Discoid meniscus.
2. Principles of therapeutic ultrasound.
3. Exercise to improve strength and endurance.
4. Carpal tunnel syndrome.
5. Core muscle strengthening program.
6. Phases of gait cycle.
7. Physiological effects of insulin.
8. Flat foot.
9. Difference between actions of peroneus longus and peroneus brevis.
10. Crouched gait.

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

[MD 1025] **OCTOBER 2025** **Sub. Code: 4054**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER II – PRINCIPLES AND PRACTICE OF PHYSICAL MEDICINE: AND REHABILITATION MANAGEMENT OF MUSCULOSKELETAL CONDITIONS

Q.P. Code: 204054

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

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the pathophysiology and clinical features of osteoarthritis of the knee in an elderly sedentary patient. Discuss evidence-based strategies to improve joint mobility, relieve pain and delay disease progression.

2. Outline the etiology, biomechanics and rehabilitation principles for a full-thickness rotator cuff tear. Discuss methods to prevent postoperative shoulder stiffness and design a phased exercise program for functional recovery.

II. Write notes on: **(10 x 7 = 70)**

1. Volkman's Ischemic contracture.
2. Principles and application of cryotherapy in acute musculoskeletal injury.
3. Role of proprioceptive neuromuscular facilitation (PNF) in balance training.
4. Myofascial pain syndrome.
5. Discuss various pathological Gaits.
6. Piriformis syndrome.
7. Entrapment neuropathy in the upper limb.
8. Spondylolisthesis.
9. Renal rickets.
10. Differences between concentric, eccentric and isometric muscle contratctions.

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

[MD 0526] **MAY 2026** **Sub. Code: 4054**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER II – PRINCIPLES AND PRACTICE OF PHYSICAL MEDICINE: AND REHABILITATION MANAGEMENT OF MUSCULOSKELETAL CONDITIONS

Q.P. Code: 204054

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

I. Elaborate on: **(2 x 15 = 30)**

1. Describe the mechanical and biochemical changes in tendinopathy of the Achilles tendon in runners. Discuss the role of load management and adjunct therapies in promoting tendon healing.

2. Explain the pathophysiology and clinical presentation of complex regional pain syndrome (type 1). Outline a multidisciplinary rehabilitation protocol to restore function and alleviate pain.

II. Write notes on: **(10 x 7 = 70)**

1. Biomechanics and rehabilitation of Flat foot.
2. Indications and contraindications of Extracorporeal Shock Wave Therapy.
3. Principles of plyometric training in musculoskeletal rehabilitation.
4. Erb's palsy.
5. Describe various Crutch gaits.
6. Pathophysiology and treatment of adhesive capsulitis.
7. Gouty Arthritis.
8. Thoracic Outlet syndrome.
9. Criteria for return-to-play after anterior cruciate ligament reconstruction.
10. Principles of Tendon Transfer Procedures.

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