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

[MD 0524] **MAY 2024** **Sub. Code: 4056**

M.D. DEGREE EXAMINATION

BRANCH XIX – PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – LEGISLATION, RECENT ADVANCES AS APPLIED TO PHYSICAL MEDICINE AND REHABILITATION

Q.P. Code: 204056

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

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

1. Discuss the Community Reintegration of a fully rehabilitated spinal cord-injured person. Use of ICF as a theoretical framework for measuring Community Reintegration.

2. Classify the different types of aphasia. Outline the evaluation and recent advances using Augmentative Alternative Communication (AAC) in the management of Aphasia.

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

1. Intrathecal Baclofen.
2. Discuss recent advances in a wheelchair and accessories.
3. Effectiveness of Continuous versus Pulsed Short-Wave Diathermy in the management of OA knee.
4. Virtual distant rehabilitation (Telerehabilitation) for follow-up in remote India.
5. Functional mobility.
6. Advances in Gait Analysis.
7. Advances in Drug Delivery Systems.
8. Microprocessor prosthetic knee joints.
9. Neuropathic pain after spinal cord injury.
10. Gross Motor Functional Classification System.

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

[MD 1224] **DECEMBER 2024** **Sub. Code: 4056**

(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – LEGISLATION, RECENT ADVANCES AS APPLIED TO PHYSICAL MEDICINE AND REHABILITATION

Q.P. Code: 204056

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

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

1. Discuss the rehabilitation of an ASIA C Tetraplegic with moderate spasticity using Robotic orthosis and Virtual reality. Discuss briefly the advantages and disadvantages of Robotic therapy versus manual therapy.

2. Discuss the role of assistive technology for communication disorders and mobility impairments.

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

1. Motor-point block versus Botox injection.
2. Advances in wheelchair design that can be used in the community mobility.
3. Advances in terminal devices of upper limb prosthesis.
4. Biomechanical principles and newer technology in the design of quadrilateral socket.
5. Cell-Based Therapies for Degenerative Musculoskeletal Diseases.
6. “Advanced footwear technology” (AFT) on the sprint performance.
7. The Rights of Persons with Disabilities Act, 2016 (PWD).
8. Human – Computer interface in Neurorehabilitation.
9. Thermoplastics.
10. Virtual augmentation in Rehabilitation.

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

[MD 0525] **MAY 2025** **Sub. Code: 4056**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – LEGISLATION, RECENT ADVANCES AS APPLIED TO PHYSICAL MEDICINE AND REHABILITATION

Q.P. Code: 204056

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

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

1. Discuss the Community-based rehabilitation (CBR guidelines 2010) and its strategies. Describe a CBR model in detail that you are familiar with at your Institution.

2. Discuss the "International Classification of Functioning, Disability, and Health" (ICF) framework. Outline briefly its Aims, Principles and Model. Give a T10 paraplegic as an example, and represent a few domains of each component, which could be related to the health condition and some environmental factors.

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

1. New hypoglycaemic drugs.
2. Functional Electric Stimulation (FES) orthosis for footdrop.
3. Advances in the surgical management of Crouched gait in CP.
4. Deep brain stimulation.
5. Role of 'Artificial Intelligence' (AI) in Rehabilitation.
6. Advances in the care of Decubitus ulcers and prevention.
7. Advances in obesity management.
8. Extended PLISSIT model.
9. Adaptive devices for independence with feeding and dressing.
10. Supported employment.

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

[MD 1025] **OCTOBER 2025** **Sub. Code: 4056**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – LEGISLATION, RECENT ADVANCES AS APPLIED TO PHYSICAL MEDICINE AND REHABILITATION

Q.P. Code: 204056

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

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

1. Discuss the role of Assistive technology in enhancing the quality of life for persons with disabilities. Illustrate with an example of an assistive device program implemented in a healthcare or community-based rehabilitation centre.

2. Discuss the Biopsychosocial Model of Disability and its application in contemporary rehabilitation practice. Outline its key components and therapeutic approaches. Take a C6 tetraplegic patient as an example and demonstrate how different aspects of this model (biological, psychological and social factors) influence rehabilitation outcomes and treatment planning.

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

1. Recent advances in anti-spasticity medications.

2. Wearable sensors for gait analysis and movement monitoring.

3. Recent advancements in neurostimulation and robotic technologies for rehabilitation in Stroke patients.

4. Transcranial magnetic stimulations (TMS) in neuro-rehabilitation.

5. Applications of Virtual Reality (VR) in physical medicine and rehabilitation.

6. Modern approaches to chronic pain management in rehabilitation settings.

7. Stem cell therapy in neurological rehabilitation.

8. Tele-rehabilitation and remote monitoring systems.

9. Smart prosthetics and brain-computer interfaces for upper limb amputees.

10. Vocational rehabilitation and return-to-work programs.

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

[MD 0526] **MAY 2026** **Sub. Code: 4056**

M.D. DEGREE EXAMINATION

PHYSICAL MEDICINE AND REHABILITATION

PAPER IV – LEGISLATION, RECENT ADVANCES AS APPLIED TO PHYSICAL MEDICINE AND REHABILITATION

Q.P. Code: 204056

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

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

1. Discuss the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and its impact on rehabilitation medicine. Describe how Article 26 (Habilitation and Rehabilitation) has been implemented in clinical practice. Provide a detailed example of a rehabilitation program that aligns with UNCRPD principles.

2. Elaborate on Evidence-Based Practice in Physical Medicine and Rehabilitation. Discuss the hierarchy of evidence, systematic reviews and clinical practice guidelines. Using stroke rehabilitation as an example, demonstrate how evidence-based protocols influence treatment decisions across different phases of recovery (acute, subacute and chronic).

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

1. Botulinum toxin – newer formulations and injection techniques.
2. Robotic exoskeletons for gait training in spinal cord injury.
3. Recent developments in spinal cord stimulation for chronic pain.
4. Constraint-Induced Movement Therapy (CIMT) – modified protocols.
5. Regenerative medicine applications in musculoskeletal rehabilitation.
6. Neuroplasticity and motor learning principles in rehabilitation.
7. Assistive technology – smart wheelchairs and mobility aids.
8. Advances in functional electrical stimulations (FES) orthoses for foot drop.
9. Recent advancements in pharmacological management of rheumatoid arthritis.
10. Outcome measures and digital health assessments in rehabilitation.

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