

MASTER OF PHYSIOTHERAPY (MPT)
SEMESTER -IV EXAMINATION, JUNE-2026

(MPT2 403) NEUROLOGICAL DISORDERS- RECENT ADVANCES-II

[Time allotted: Three Hours]

[Max Marks: 100]

Note: Read all the instructions carefully

Answer all questions in serial order. Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Attempt All)

(10 x 02 = 20)

(Very short/ short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)

- a. Barthel index is a measure of physical function, while the FIM is a comprehensive measure that includes self-care and locomotion only. **(True/ False)**
- b. Which of the following outcome measures is used to assess cognitive function in neurological disorders?
 - i. Mini-Mental State Examination.
 - ii. Montreal Cognitive Assessment (MoCA).
 - iii. Clinical Dementia Rating (CDR).
 - iv. All of the above.
- c. Which of the following is considered a key component of motor learning strategies in neurorehabilitation?
 - i. Passive range of motion exercises.
 - ii. Constraint-induced movement therapy.
 - iii. Medication adjustments.
 - iv. Electrotherapy alone.
- d. Which form of neuromuscular electrical stimulation (NMES) is gaining attention for improving motor function in patients with chronic stroke?
 - i. Conventional NMES.
 - ii. Functional electrical stimulation (FES).
 - iii. Transcutaneous Electrical Stimulation (TENS).
 - iv. IFT.
- e. Which of the following is a primary goal of physiotherapy in managing Duchenne muscular dystrophy (DMD)?
 - i. Complete muscle regeneration
 - ii. Enhancing muscle strength to the point of reversal of the disease
 - iii. Maintaining functional mobility and preventing contractures.
 - iv. Promoting rapid muscle growth.
- f. In managing muscle weakness and preventing contractures in Becker muscular dystrophy, which type of exercise is emphasized?
 - i. High-intensity interval training.
 - ii. Flexibility and gentle strengthening exercises.
 - iii. Static stretching only
 - iv. Aggressive strengthening exercises.
- g. What is the primary purpose of using orthotic devices in the management of muscular dystrophy?
 - i. To cure the underlying disease.
 - ii. To improve muscle strength significantly.
 - iii. To support weakened muscles and improve functional mobility.
 - iv. To replace physical therapy.
- h. Which principle is central to the Motor Relearning Program (MRP) for neurological disorders?
 - i. Motor learning occurs best through random practice
 - ii. Practice should be high in variability and complexity from the start
 - iii. Task-specific practice with feedback and repetition enhances motor learning.
 - iv. Minimal feedback is necessary to improve motor performance.
- i. Which of the following best describes the role of repetition in Butler's approach to motor learning in neurological disorders?
 - i. Repetition is avoided to prevent fatigue
 - ii. Repetition is used selectively to enhance the learning of specific motor tasks
 - iii. Repetition is used extensively to reinforce motor learning and improve functional outcomes.
 - iv. Repetition is only applied during the initial assessment phase.
- j. Which of the following is a typical postoperative care recommendation following disc surgery?
 - i. Immediate and intense physical activity to regain strength.
 - ii. Strict bed rest for several weeks.
 - iii. Gradual reintroduction of physical activity with specific postural and movement restrictions.
 - iv. Avoidance of any form of physical therapy.

Q. 2. Short notes/ Short answer type questions (Attempt any Five)

(05 x 04 = 20)

- a. Write in detail about MRC scale for muscle strength. (CO3/PO6)
- b. Write in detail of the scales used for dysphagia. (CO3/PO5)
- c. Physiotherapy recent advancement for gait training in Parkinson's disease. (CO2/PO6)
- d. Differentiate among the impairments related to UMN dysfunction and LMN dysfunction. (CO1/PO2)
- e. What is the role of NMES in the rehabilitation of Guillain barre Syndrome? (CO1/PO5)
- f. What are the benefits of using virtual reality in improving cognitive and motor function in Multiple Sclerosis? (CO2/PO6)
- g. What is Lower Extremity Functional Scale? (CO3/PO5)

P.T.O.....

Q. 3. Structured questions (Attempt any Three)

(03 x 10 = 30)

- a. Write in brief
 - i. How does physiotherapy impact outcomes in patients with Amyotrophic lateral sclerosis (ALS)? (C03/ PO3)
 - ii. How does functional electrical stimulation (FES) improve muscle function and mobility in ALS patients? (CO1/ PO2)
 - iii. What is the role of tele-rehabilitation in ALS? (CO1/PO3)
- b. i. Differentiate between meningitis and encephalitis. (CO1/ PO5)
 - ii. Enlist the differential diagnosis of such Meningitis. (CO1/PO3)
 - iii. Evidence based guidelines of patient care in meningitis. (CO1/PO6)
- c. i. What is the impact of exoskeletons on mobility and independence in traumatic neuropathy patients? (CO1/PO3)
 - ii. What is the role of Cognitive- behavioral therapy (CBT) in addressing neuropathic pain and depression? (CO2/PO5)
 - iii. Mention the Laser type and how it will be helpful to enhance nerve regeneration and repair. (CO2/PO6)
- d. i. What is NCV? (CO1/PO2)
 - ii. What is the role or importance of NCV in clinical practice? (CO2/PO5)
 - iii. Mention the conditions in which NCV can be advised. (CO2/PO6)

Q. 4. Long Answer/ Essay type questions (Attempt any Two)

(02 x 15 = 30)

- a. i. Write in detail about scales used to assess functional independence in PIVD. (CO3/ PO5)
 - ii. Design the treatment plan based on electrotherapy point of view according to the findings. (CO2/PO6)
- b. i. Write in detail about EMG feedback and its role in clinical practice. (CO1/PO2)
 - ii. What are the various traditional approach to rehabilitate the neurological conditions? (CO2/PO5)
- c. i. Design the rehabilitation program with recent advance techniques for the rehabilitation of Hydrocephalus. (CO2/PO5)
 - ii. Enumerate the ADL assistive equipment which can be used by patients with developmental delays. (CO2/PO6)