



**UNIVERSITI KUALA LUMPUR
ROYAL COLLEGE OF MEDICINE PERAK**

**FINAL EXAMINATION
JULY 2025 SEMESTER**

COURSE CODE	: RFB30203
COURSE NAME	: PHYSIOTHERAPY IN NEUROLOGY 1
PROGRAMME NAME	: BACHELOR OF PHYSIOTHERAPY (HONOURS)
DATE	: 17 SEPTEMBER 2025
TIME	: 9.00 AM – 11.00 AM
DURATION	: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please read **CAREFULLY** the instructions given in the question paper.
 2. This question paper has information printed on both sides of the paper.
 3. This question paper consists of **TWO (2)** sections; Section A and Section B.
 4. Answer **ALL** questions in Section A and **THREE (3)** questions in Section B; Question 1 and Question 2 are **COMPULSORY**.
 5. Please mark/write your answers on the OMR answer script and answer booklet provided.
 6. Answer all questions in English language **ONLY**.
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THERE ARE 9 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)**I) MULTIPLE CHOICE QUESTIONS (20 marks)****INSTRUCTION: Answer ALL questions.****Please use the OMR sheet provided.**

1. Define neuroplasticity.
 - A. The ability to regulate the mechanisms which is essential to movement.
 - B. A restorative, therapeutic approach based on system theory and motor control.
 - C. Integration of sensory impressions into psychologically meaningful information.
 - D. A process that involves adaptive structural and functional changes to the brain after injury.
 - E. A set of processes associated with practice or experience leading to relatively permanent changes in the capability for movement.

2. Identify the **CORRECT** statement of ecological theory.
 - A. Motor control is a self-organizing system.
 - B. Maintain the role of central nervous system.
 - C. Perception plays a greater role in action than sensation.
 - D. Central nervous system function as command centre for all movement tasks.
 - E. Higher centers such as motor cortex are considered to inhibit the lower centers.

3. **“Mr. J was unable to differentiate between the hot and cold sensation.”**
Identify the suitable assessment for Mr. J.
 - A. Joint sense.
 - B. Pinprick test.
 - C. Cotton wool test.
 - D. Hot and cold test.
 - E. 2 point discrimination.

4. What is the common clinical feature for multiple sclerosis?
 - A. Fatigue.
 - B. Bradykinesia.
 - C. Fasciculations.
 - D. Tremor at rest.
 - E. Flaccid paralysis.

5. Identify the aim of physiotherapy treatment for Parkinson's disease.
- A. Cure of the disease.
 - B. Elimination of tremors.
 - C. Reversal of motor symptoms.
 - D. Prevention of cognitive decline.
 - E. Improvement of movement initiation.
6. What is the **MAIN** characteristic of benign multiple sclerosis?
- A. It always results in complete paralysis within five years.
 - B. It involves rapid progression of neurological symptoms.
 - C. It shows slow progression with frequent relapses and remissions.
 - D. It is characterized by severe motor and cognitive deficits from the beginning.
 - E. It is a form of relapsing-remitting multiple sclerosis that remains mild and fully functional for at least ten years after disease onset.
7. Identify the suitable assessment for a stroke patient in sitting position.
- A. Tandem test.
 - B. Romberg test.
 - C. 4-square step test.
 - D. Finger to nose test.
 - E. Time up and go test.
8. What is the common cause of death in patients with Alzheimer's disease?
- A. Stroke.
 - B. Cancer.
 - C. Septicemia.
 - D. Pneumonia.
 - E. Myocardial infarction.
9. Find the clinical sign indicating the occurrence of TBI.
- A. Increased energy levels following the event.
 - B. Persistent headache without neurological changes.
 - C. Decreased heart rate immediately following the injury.
 - D. Improvement in cognitive function shortly after the injury.
 - E. Loss of memory for events immediately before or after the injury.

10. "Jane was diagnosed with traumatic brain injury (TBI) and her Glasgow Coma Scale (GCS) score is E4V4M3".

Select her current motor condition.

- A. Flaccid and fail to response.
- B. Abnormal response to pain stimulus.
- C. Decerebrate response to pain stimulus.
- D. Can process instruction and response by obeying command.
- E. Can withdraw from painful stimulus with abduction of shoulder.

11. Select the criteria that explains moderate TBI.

- A. Glasgow Coma Scale is 13 to 15 score.
- B. Self-reported amnesia less than 24 hours.
- C. Alteration of consciousness up to 24 hours.
- D. Post-traumatic amnesia for more than 7 days.
- E. Loss of consciousness for more than 30 minutes but less than 24 hours.

12. What is the common cause of TBI in sports?

- A. Blast injury.
- B. Alleged theft.
- C. Penetrating trauma.
- D. Body to body collision.
- E. Motor vehicle accident (MVA).

13. Find the primary distinguishing feature between encephalitis and meningitis.

- A. Presence of seizures.
- B. Neck stiffness in meningitis.
- C. Altered mental status in encephalitis.
- D. Both affect cerebrospinal membranes.
- E. Common involvement of viral pathogens.

14. Select the pathogen that is mostly associated with bacterial meningitis.

- A. Nipah virus.
- B. Herpesvirus.
- C. Blastomycetes.
- D. Listeria monocytogenes.
- E. Streptococcus pneumoniae.

15. Identify the hallmark sign of meningitis based on Kernig's test.
- A. Rash and abdominal pain.
 - B. Muscle pains and joint aches.
 - C. Severe neck stiffness causes difficulty moving.
 - D. Flexion of hips and knees when neck is flexed.
 - E. Inability to straighten the leg when the hip is flexed.
16. Find the complication that commonly associated with poliomyelitis.
- A. Hydrocephalus.
 - B. Bulbar paralysis.
 - C. Cerebral edema.
 - D. Subdural abscess.
 - E. Cognitive impairment.
17. What is the **MAIN** cause of a transient ischemic attack (TIA)?
- A. Malnutrition.
 - B. Overactive nerve signals.
 - C. Blockage of a cerebral artery.
 - D. Excessive alcohol consumption.
 - E. Increased oxygen supply to the brain.
18. Identify the "F" in the F.A.S.T. warning signs of stroke.
- A. Fast heartbeat.
 - B. Facial drooping.
 - C. Full-body weakness.
 - D. Frequent headaches.
 - E. Fractured coordination.
19. Select the early clinical manifestation of ischemic stroke.
- A. Recurrent fever.
 - B. Persistent cough.
 - C. Suddenly severe headache.
 - D. Gradual loss of consciousness.
 - E. Numbness on one side of the body.

20. Identify the important warning sign of a stroke.
- A. Loss of appetite.
 - B. Excessive sweating.
 - C. Sudden weight loss.
 - D. Frequent muscle cramps.
 - E. Transient ischemic attack.

II) SHORT ANSWER QUESTIONS (20 marks)

INSTRUCTION: Answer ALL questions in the answer booklet provided.

Each question carries FOUR (4) marks.

1. Explain task-oriented approaches in physiotherapy.
2. Explain the pathological changes that happen in focal brain injury.
3. State **FOUR (4)** sign and symptoms in mild Alzheimer's disease.
4. List **FOUR (4)** symptoms of TBI in athletes.
5. Give **FOUR (4)** clinical presentations of acute stroke.

SECTION B: MODIFIED ESSAY QUESTIONS (Total: 60 marks)

**INSTRUCTION: This section consists of FOUR (4) questions.
Answer THREE (3) questions in the answer booklet provided.
Question 1 and Question 2 are COMPULSORY.**

Question 1

Mrs. T is a 78-year-old woman who was diagnosed with Parkinson's disease 5 years ago. She has symptoms like shaking when resting, slow movement, stiff muscles, and poor balance. Over the past year, her symptoms have worsened. She now feels short of breath during long walks and finds it harder to do daily tasks like dressing, walking, and getting out of bed.

With reference to the above case, answer all the following questions.

- (a) Identify **FOUR (4)** Mrs. T's problem and its effect on her daily life. (8 marks)
- (b) Determine **FOUR (4)** suitable outcome measure for Mrs. T with justification. (8 marks)
- (c) Identify **FOUR (4)** stretching exercise prescription for Mrs. T. (4 marks)

Question 2

- (a) Explain the procedure of Brudzinski's test in a patient suspected of meningitis. (4 marks)
- (b) "John was diagnosed with poliomyelitis, 2 years ago. He now complains of knee pain in high impact activity". Describe **THREE (3)** goals of hydrotherapy treatment for John. (6 marks)
- (c) Explain the procedure of Romberg's test. (10 marks)

Question 3

Mr. J was in MVA. His GCS score in the first 24 hours was 3 and the score increased to 6 upon discharge. He just recently started to walk with the help of elbow crutches on his left side. He still has problems with his balance and coordination. His lower limb appears to be weak, mostly on his left side. Slight hypertone on his right elbow. He sometimes complains of pain in his left leg. His Montreal Cognitive Assessment (MoCA) score is 24.

With reference to the above case, answer all the following questions.

- (a) Determine **FOUR (4)** physical examination for Mr. J with justification. (8 marks)
- (b) Prescribe **FOUR (4)** physiotherapy interventions for Mr. J based on answer in (a). (12 marks)

Question 4

A 55-year-old male is brought to the emergency department with sudden right-sided weakness, slurred speech, and facial drooping.

With reference to the above case, answer all the following questions.

- (a) Describe the underlying pathophysiology of the above symptoms. (3 mark)
- (b) Identify **FIVE (5)** potential clinical presentations if the patient does not receive immediate intervention. (5 marks)
- (c) Discuss **FOUR (4)** current physiotherapy management for him. (12 marks)

END OF EXAMINATION PAPER