



UNIVERSITI KUALA LUMPUR
ROYAL COLLEGE OF MEDICINE PERAK

FINAL EXAMINATION
MARCH 2026 SEMESTER

COURSE CODE : RFB31003
COURSE NAME : PHYSIOTHERAPY IN NEUROLOGY 2
PROGRAMME NAME : BACHELOR OF PHYSIOTHERAPY (HONOURS)
DATE : 23 JUNE 2026
TIME : 2.30PM – 4.30PM
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.

THERE ARE 10 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. Find the anatomical term refers to structure located towards the back of the body.
 - A. Dorsal.
 - B. Caudal.
 - C. Ventral.
 - D. Superior.
 - E. Rostral direction.
2. Identify the myotome of C6 nerve roots for neurological testing in American Spinal Injury Association Impairment Scale (AIS/ ASIA).
 - A. Wrist flexors.
 - B. Elbow flexors.
 - C. Hip extensors.
 - D. Wrist extensors.
 - E. Knee extensors.
3. Select the tract responsible for transmitting pain and temperature sensations.
 - A. Rubrospinal.
 - B. Corticospinal.
 - C. Spinothalamic.
 - D. Vestibulospinal.
 - E. Posterior column tract.
4. Identify the syndrome characterized by greater upper limb weakness than lower limb weakness.
 - A. Central cord.
 - B. Anterior cord.
 - C. Cauda equina.
 - D. Brown-sequard.
 - E. Conus medullaris.

5. Select the pathophysiology of Myasthenia Gravis.
- A. Destruction of myelin.
 - B. Degeneration of motor cortex.
 - C. Inflammation of peripheral nerves.
 - D. Autoimmune attack on acetylcholine receptors.
 - E. Compression of spinal nerve roots by disc material.
6. Identify the type of Muscular Dystrophy that is more likely to affect males than females.
- A. Myotonic.
 - B. Limb-Girdle.
 - C. Emery-Dreifuss.
 - D. Oculopharyngeal.
 - E. Facioscapulohumeral.
7. Select the clinical feature associated with advanced Muscular Dystrophy.
- A. Sensory loss.
 - B. Hyperreflexia.
 - C. Muscle hypertrophy.
 - D. Pseudohypertrophy of calf muscles.
 - E. Increased coordination of movement.
8. Find the clinical feature of hemifacial spasm.
- A. Loss of facial sensation.
 - B. Bilateral facial weakness.
 - C. Inability to move both eyes.
 - D. Complete paralysis of both facial nerves.
 - E. Involuntary twitching of muscles on one side of the face.
9. Select the neurological examination used to assess cranial nerve V.
- A. Smell.
 - B. Eye movement.
 - C. Shoulder shrug.
 - D. Facial sensation.
 - E. Hearing and balance.

10. Identify the symptoms of trigeminal neuralgia.
- A. Muscle tremor.
 - B. Electric shock-like facial pain.
 - C. Gradual loss of facial sensation.
 - D. Bilateral weakness of facial muscles.
 - E. Continuous dull aching pain in the neck.
11. Find the correct statement related to Bell's palsy.
- A. It is always caused by stroke.
 - B. It presents with sudden, unilateral facial paralysis.
 - C. It commonly results from cranial nerve VIII damage.
 - D. It is a progressive degenerative disease of the brain.
 - E. It usually affects both sides of the face simultaneously.
12. Identify the neuromuscular disorder associated with antibodies against presynaptic voltage-gated calcium channels.
- A. Botulism.
 - B. Myasthenia gravis.
 - C. Becker muscular dystrophy.
 - D. Duchenne muscular dystrophy.
 - E. Lambert-Eaton myasthenic syndrome.
13. Which protein is affected in Duchenne Muscular Dystrophy?
- A. Actin.
 - B. Myosin.
 - C. Collagen.
 - D. Troponin.
 - E. Dystrophin.
14. Select the disorder that is commonly linked with thymic abnormalities.
- A. Botulism.
 - B. Myasthenia gravis.
 - C. Lambert-Eaton syndrome.
 - D. Becker muscular dystrophy.
 - E. Duchenne muscular dystrophy.

15. Identify the structure that forms the outer covering of a peripheral nerve.
- A. Epineurium.
 - B. Perineurium.
 - C. Endoneurium.
 - D. Myelin sheath.
 - E. Node of Ranvier.
16. Which deformity is commonly associated with radial nerve injury?
- A. Foot drop.
 - B. Wrist drop.
 - C. Claw hand.
 - D. Ape thumb.
 - E. Pointing index.
17. Identify the peripheral nerve classification that refers to temporary nerve paralysis without loss of structural continuity.
- A. Neurapraxia.
 - B. Axonotmesis.
 - C. Neurotmesis.
 - D. Wallerian degeneration.
 - E. Segmental demyelination.
18. Which symptom is commonly reported in diabetic neuropathy?
- A. Visual aura.
 - B. Neck rigidity.
 - C. Facial droop.
 - D. Burning pain.
 - E. Memory loss.
19. Select the recommended exercise for improving balance in patients with diabetic neuropathy.
- A. High jumping.
 - B. Sprint running.
 - C. One leg stance.
 - D. Bed rest training.
 - E. Heavy lifting only.

20. Which approach uses sensory stimulation to normalize muscle tone?
- A. Rood approach.
 - B. Frenkel exercise.
 - C. Bobath approach.
 - D. Brunnstrom approach.
 - E. Constraint-induced therapy.

II) SHORT ANSWER QUESTIONS (20 marks)**INSTRUCTION: Answer ALL questions in the answer booklet provided.****Each question carries FOUR (4) marks.**

1. Give **FOUR (4)** complications of spinal cord injury.
2. List **FOUR (4)** clinical features of congenital ataxia.
3. State **FOUR (4)** clinical features of Lambert-Eaton myasthenic syndrome.
4. Outline **FOUR (4)** possible complications of Guillain-Barré syndrome.
5. Describe the purpose of using Brunnstrom stages in stroke rehabilitation.

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

A 30-year-old male was involved in a diving accident and sustained a spinal cord injury at the cervical level. He presents with weakness of all four limbs, impaired trunk control, and difficulty performing bed mobility. Sensory examination reveals preserved sensation at S4–S5.

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

- (a) Identify his classification of SCI according to AIS/ASIA. (1 mark)
- (b) Justify the answer in (a). (4 marks)
- (c) Describe the procedure of wheelchair pressure relief technique for him. (6 marks)
- (d) Explain **THREE (3)** physiotherapy treatments to improve his trunk control. (9 marks)

Question 2

Madam Lina, a 42-year-old tailor, presents with numbness and tingling over the right little finger and ring finger. She reports difficulty gripping scissors and holding fabric securely during sewing activities. On examination, there is weakness of the intrinsic hand muscles and a claw-like posture of the hand.

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

- (a) Identify the nerve involved and the possible deformity presented in Madam Lina condition.

(2 marks)

- (b) Determine **THREE (3)** muscles affected by her condition and describe their functions.

(6 marks)

- (c) Describe **THREE (3)** physical examinations for Madam Lina, with the related physiotherapy treatment and justification for each.

(12 marks)

Physical examination	Justification	Physiotherapy intervention	Justification

Question 3

- (a) "Mr. Ahmad, a 60-year-old man with type 2 diabetes mellitus for 15 years, complains of burning pain, numbness, and tingling sensation in both feet. He reports that the symptoms become worse at night. Recently, he has started to feel unsteady while walking and almost fell when walking to the bathroom. On physiotherapy assessment, he shows reduced sensation over both feet, weak ankle dorsiflexors and plantarflexors, reduced ankle reflex, and poor balance during tandem standing."

How does this condition affect Mr. Ahmad daily life?

(8 marks)

- (b) "A 32-year-old female complains of right shoulder pain and difficulty turning her head. Clinical examination reveals weakness and muscle wasting of the right trapezius and sternocleidomastoid muscles with muscle strength grading of 3/5."

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

- i. Identify the cranial nerve affected for her condition.

(1 mark)

- ii. List **THREE (3)** possible complications based on answer in (i).

(3 marks)

- iii. Explain **FOUR (4)** physiotherapy treatments to improve her muscle strength.

(8 marks)

Question 4

- (a) "Mr. Hassan, a 58-year-old man, has weakness in both legs, especially when standing up from a chair and climbing stairs. His legs feel weak at first but become slightly stronger after repeated movements. During physiotherapy assessment, he has proximal muscle weakness and difficulty doing repeated sit-to-stand. The doctor says his condition is caused by antibodies attacking voltage-gated calcium channels, which reduces neurotransmitter release."

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

- i. What is the possible diagnosis for Mr. Hassan?
(1 mark)
- ii. Why did Mr. Hassan muscle strength improve after repeated movement?
(2 marks)
- iii. Explain **THREE (3)** physiotherapy interventions related to his condition.
(12 marks)
- (b) "A 38-year-old male was diagnosed with right Bell's palsy. Clinical examination reveals weakness of the right facial muscles and difficulty smiling on the affected side."
Explain strengthening exercise procedure to improve his facial muscle function.
(5 marks)

END OF EXAMINATION PAPER