



UNIVERSITI KUALA LUMPUR
ROYAL COLLEGE OF MEDICINE PERAK

FINAL EXAMINATION
MARCH 2026 SEMESTER

COURSE CODE : RFB31103
COURSE NAME : PHYSIOTHERAPY IN PAEDIATRICS
PROGRAMME NAME : BACHELOR OF PHYSIOTHERAPY (HONOURS)
DATE : 29 JUNE 2026
TIME : 2.30 PM – 4.30 PM
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 11 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. Select the primitive reflex that facilitates weight shifting and prepares an infant for rolling movement.
- A. Startle reflex.
 - B. Rooting reflex.
 - C. Spinal galant reflex.
 - D. Tonic labyrinthine reflex.
 - E. Asymmetrical tonic neck reflex.

2.

- **Rolls from supine to lying.**
 - **Begin to sit without support.**
 - **Able to sit to lying on tummy.**
 - **Transfer object from hand to hand.**

Identify the developmental age milestone as above statement.

- A. 3 months.
 - B. 5 months.
 - C. 6 months.
 - D. 9 months.
 - E. 11 months.
3. Find the limit age for a child to achieve independent walking as a normal developmental milestone.
- A. 8 months.
 - B. 10 months.
 - C. 12 months.
 - D. 18 months.
 - E. 20 months.

4. Select the motor developmental milestone for 2 months baby.
- I. Turn head to both sides when lying down.
 - II. Lifts head and shoulders with weight on forearms.
 - III. Able to lift head and begin pushing up during prone lying.
 - IV. Moves arms and legs and 'bicycling' legs movement when excited.
- A. I and III.
B. III and IV.
C. I, II, and III.
D. I, III, and IV.
E. II, III, and IV.
5. Identify the purpose of Bayley Scales of Infant Development (BSID).
- I. Identify children with developmental delay.
 - II. Detect functional limitation and participation.
 - III. Provide information for intervention planning.
 - IV. Identify infants with abnormal motor development.
- A. I and III.
B. III and IV.
C. I, II, and III.
D. I, III, and IV.
E. II, III, and IV.
6. Find the purpose of Gross Motor Function Classification System (GMFCS).
- I. To know the needs of assistive technology.
 - II. Evaluate delay motor development over time.
 - III. Function is emphasis, not quality of movement.
 - IV. Composed of 4 subscales of physical movement.
- A. I and II.
B. III and IV.
C. I, II, and III.
D. I, III, and IV.
E. II, III, and IV.

7. Identify the level of GMFCS for a child who can walk using crutches at home and school but uses a wheelchair during field trips.
- A. Level I.
 - B. Level II.
 - C. Level III.
 - D. Level IV.
 - E. Level V.
8. What are the congenital heart defects commonly associated with ventricular septal defects?
- I. Tetralogy of fallot.
 - II. Single ventricular defect.
 - III. Transposition of great vessel.
 - IV. Congenital diaphragmatic hernia.
- A. I and II.
 - B. I and III.
 - C. II and III.
 - D. II and IV.
 - E. III and IV.
9. **"A child with meconium aspiration syndrome develops breathing difficulty."**
What is the main effect of meconium in the airway?
- A. Improves oxygen diffusion.
 - B. Enhances alveolar ventilation.
 - C. Increases pulmonary circulation.
 - D. Causes airway obstruction and inflammation.
 - E. Reduces lung compliance by increasing surfactant.
10. Find the importance of early detection in global developmental delay.
- A. It removes the need for therapy.
 - B. It prevents all learning problems.
 - C. It guarantees normal development.
 - D. It prevents all neurological disorders.
 - E. It allows early intervention to improve developmental outcomes.

11. Which of the following statements best describes the impact of Cystic Fibrosis Transmembrane Conductance (CFTR) protein dysfunction on epithelial cell function?
- A. CFTR protein dysfunction leads to increased chloride permeability, allowing better fluid secretion.
 - B. The abnormal CFTR protein causes electrolyte imbalances but does not affect fluid secretion or mucus hydration.
 - C. CFTR dysfunction results in an increased ability of the cell membrane to secrete fluid, improving mucociliary clearance.
 - D. The primary consequence of CFTR dysfunction is the inability of cells to produce sodium, causing fluid accumulation.
 - E. The malfunction of the CFTR protein results in electrolyte imbalances, including chloride impermeability and sodium hyperpermeability, which impair fluid secretion and lead to underhydrated mucus.
12. What is the main developmental defect in spina bifida?
- A. Failure of neural tube closure.
 - B. Overgrowth of spinal muscles.
 - C. Abnormal formation of the skull.
 - D. Complete fusion of vertebral arches.
 - E. Excessive cerebrospinal fluid absorption.
13. Which condition is described as permanent neurodevelopmental disorder caused by non-progressive lesion in the immature brain?
- A. Spina bifida.
 - B. Cerebral palsy.
 - C. Hydrocephalus.
 - D. Muscular dystrophy.
 - E. Brachial plexus injury.
14. Find the common type of muscular dystrophy among children.
- A. Myotonic dystrophy.
 - B. Becker muscular dystrophy.
 - C. Duchenne muscular dystrophy.
 - D. Limb-girdle muscular dystrophy.
 - E. Facioscapulohumeral dystrophy.

15. Identify the condition associated with neuromuscular scoliosis.
- A. Torticollis.
 - B. Down syndrome.
 - C. Friedreich ataxia.
 - D. Marfan syndrome.
 - E. Ehlers-Danlos syndrome.
16. What is the risk factor/s for congenital talipes equinovarus (CTEV)?
- I. Obesity.
 - II. Hormonal changes.
 - III. Intrauterine malposition.
 - IV. Arrest in embryonic development.
- A. II only.
 - B. III only.
 - C. I and IV.
 - D. II and III.
 - E. III and IV.
17. Which gait pattern is commonly observed in bilateral congenital hip dislocation?
- A. Antalgic gait.
 - B. Waddling gait.
 - C. Steppage gait.
 - D. Scissoring gait.
 - E. Hemiplegic gait.
18. Find the diagnosis for the child who avoids eye contact, prefers repetitive play, and has delayed speech development.
- A. Mental abuse.
 - B. Physical abuse.
 - C. Autism spectrum disorder.
 - D. Impulsive autism spectrum disorder.
 - E. Attention Deficit Hyperactive Disorder (ADHD).

19. Which position is commonly used to improve oxygenation in Paediatric Intensive Care Unit (PICU) patients?
- A. Prone position.
 - B. Supine flat position.
 - C. Trendelenburg position.
 - D. Side lying with hips flexed.
 - E. Long sitting with neck flexion.
20. Select the purpose of facilitating trunk rotation in PICU treatment.
- I. To mobilize secretions.
 - II. To optimize ventilation.
 - III. To enhance thoracic mobility.
 - IV. To avoid delay gross motor development.
- A. I and II.
 - B. I and III.
 - C. III and IV.
 - D. I, II and III.
 - E. I, II and IV.

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

1. State **FOUR (4)** gross motor developments for 2 years old child.
2. Explain **FOUR (4)** clinical problems that may occur in children with myelomeningocele.
3. Describe **TWO (2)** types of congenital talipes calcaneovalgus.
4. State **FOUR (4)** parental risk factors associated with emotional abuse among children.
5. List **FOUR (4)** cardiorespiratory complications commonly seen in infants admitted to the Neonatal Intensive Care Unit (NICU).

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) A baby boy is born at 30 weeks gestation via emergency Caesarean section. The mother has gestational diabetes. Within 2 hours after birth, the baby develops tachypnea (respiratory rate: 70/min), nasal flaring, intercostal retractions, and grunting respiration. The infant appears cyanotic.

Examination shows:

- Reduced air entry bilaterally.
- Chest X-ray: diffuse granular appearance with reduced lung volume.
- ABG: hypoxemia and hypercapnia.

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

- Identify the possible diagnosis for this baby.
(1 mark)
 - Explain the pathophysiology of this condition.
(3 marks)
 - State **TWO (2)** physiotherapy treatments for this baby.
(2 marks)
 - Based on answer in (iii), give **THREE (3)** rationale for each treatment.
(6 marks)
- (b) Explain **FOUR (4)** physiotherapy interventions for a child with absence in the spinal galant reflex.
(8 marks)

Question 2

Hardy, a 6-year-old boy, complained by his mother that his movements have recently become clumsier, and he has been falling more frequently. Over the past year, she noticed a gradual decline in his activities such as running and climbing stairs. He also fatigues easily and occasionally requests to be carried during long distances walking due to pain. During the examination, a positive Gower's sign was observed.

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

- (a) What is the possible diagnosis for Hardy?
(1 mark)
- (b) Identify **THREE (3)** problems that Hardy has along with its justifications.
(9 marks)
- (c) Determine **THREE (3)** physiotherapy treatments for Hardy with its justification.
(6 marks)
- (d) Explain **TWO (2)** participation restrictions experienced by Hardy based on International Classification of Functioning, Disability and Health (ICF).
(4 marks)

Question 3

Baby A, a 10-month-old infant, was born full-term but had a prolonged NICU stay due to respiratory distress. The mother reports that Baby A is unable to crawl, cannot pulling to stand, and has difficulty grasping small objects. Upon assessment, Baby A has weak trunk control, poor postural stability, and minimal response to verbal cues. As part of the evaluation, Bayley Scales of Infant Development (BSID) is used to assess Baby A's development.

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

- (a) Discuss **THREE (3)** developmental domains assessed in BSID and the aim of each domain for Baby A.
(6 marks)
- (b) Explain **THREE (3)** physiotherapy interventions for Baby A's respiratory condition.
(9 marks)
- (c) Give **FIVE (5)** physiotherapy interventions with the goals for improving Baby A's neurodevelopmental improvement.
(5 marks)

Question 4

- (a) Explain **FOUR (4)** roles of the Gross Motor Function Measure (GMFM) in early diagnosis and intervention planning for infants at risk of cerebral palsy.

(8 marks)

- (b) Lily was diagnosed with spinal bifida meningocele at birth and is now 3 years old. She can sit independently and crawl. Recently, she has started to stand independently but is only able to maintain standing for about 10 seconds before losing balance and fall.

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

- i. Identify **THREE (6)** possible problems that Lily has.

(6 marks)

- ii. Explain **TWO (2)** physiotherapy treatments based on her condition.

(6 marks)

END OF EXAMINATION PAPER