



UNIVERSITI KUALA LUMPUR
ROYAL COLLEGE OF MEDICINE PERAK

FINAL EXAMINATION
MARCH 2026 SEMESTER

COURSE CODE : RFD23603
COURSE NAME : PHYSIOTHERAPY IN CARDIORESPIRATORY 2
PROGRAMME NAME : DIPLOMA IN PHYSIOTHERAPY
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.
5. Please mark/write your answers in the OMR answer script and answer booklet provided.
6. Answer all questions in English language **ONLY**.

THERE ARE 8 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

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

1. Find the definition of diabetes mellitus (DM).
 - A. Characterized by persistent hypoglycemia.
 - B. Characterized by persistent hyperglycemia.
 - C. Characterized by intermittent high potassium levels.
 - D. Characterized by intermittent high blood pressure levels.

2. Identify the condition that causes inflammation of gallbladder.
 - A. Cholecystitis.
 - B. Cholelithiasis.
 - C. Hepatomegaly.
 - D. Infective hepatitis.

3. Find the type of hepatitis that transmitted through drug injection and sexual contact.
 - A. Hepatitis A.
 - B. Hepatitis B.
 - C. Hepatitis C.
 - D. Hepatitis D.

4. **"A condition where the sensitivity of nerves to pain, temperature, and pressure is dulled, particularly in the legs and feet."**
Identify the condition.
 - A. Diabetic neuropathy.
 - B. Diabetic retinopathy.
 - C. Diabetic dermopathy.
 - D. Diabetic ketoacidosis.

5. Select the causes of pyelonephritis.
 - A. Viral inflammation of the liver causes hepatitis.
 - B. Fat accumulation in liver cells leads to cirrhosis.
 - C. Non-contagious bacterial infection of the bladder.
 - D. Obstruction of bile flow in the liver causing jaundice.

6. Identify the thoracic incision that preserved pectoralis major and latissimus dorsi.
- A. Axillary.
 - B. Median.
 - C. Anterolateral.
 - D. Posterolateral.
7. **"A patient is instructed to perform log roll instead of a direct sit-up after a major abdominal surgery."**
Select the primary reason based on the above statement.
- A. To prevent sudden increases in blood pressure.
 - B. To reduce the risk of developing a paralytic ileus.
 - C. To protect the integrity of the rectus abdominis and wound.
 - D. To ensure that surgical drains and catheters remain in a fixed position.
8. Find the patient education to ensure the stability of the sternal bone fusion during the first 6 to 12 weeks.
- A. Avoid driving for many years.
 - B. Avoid pulling on bed rails during mobility.
 - C. Keep the arms strictly at the side during all walking activities.
 - D. Use the arms to push up forcefully from a chair when standing.
9. Identify the post-operative complication that requires immediate cessation of a physiotherapy session.
- A. Mild surgical site pain.
 - B. A slight increase in thirst.
 - C. A sudden drop in oxygen saturation levels.
 - D. Feelings of fatigue after walking ten meters.
10. Select the appropriate intervention for a patient on Post-Operative Day 1 (POD 1) who has thick, retained secretions due to impaired ciliary function.
- A. Perform passive range of motion to the lower limbs.
 - B. Administer high-flow unconditioned dry medical gases.
 - C. Teach Active Cycle of Breathing Techniques (ACBT) with splinted huffing.
 - D. Encourage the patient to remain supine to minimize metabolic oxygen demand.

11. What is the benefit of sitting an abdominal surgery patient upright after surgery?
- A. It facilitates faster gastric emptying.
 - B. It reduces the risk of wound infection.
 - C. It prevents the development of keloid scarring by reducing tension on the skin.
 - D. It uses gravity to allow the diaphragm to drop and increase functional residual capacity.
12. Find the equipment that delivers fluids and medications to patient in Intensive Care Unit (ICU).
- A. Blender.
 - B. Ventilator.
 - C. Infusion pump.
 - D. Drainage pump.
13. Select the ventilation that requires endotracheal intubation or tracheostomy.
- A. Invasive ventilation.
 - B. Non-invasive ventilation.
 - C. Negative pressure ventilator.
 - D. Continuous positive airway pressure ventilator.
14. Identify the indication of underwater seal drainage.
- A. Haemothorax.
 - B. Mild asthma attack.
 - C. Mild bronchitis with cough.
 - D. Upper respiratory tract infection.
15. **“Delivers the preset volume or pressure and preset respiratory rate while allowing the patient to breathe spontaneously.”**
Select the type of ventilator.
- A. Pressure support ventilation (PSV).
 - B. Positive-end expiratory pressure (PEEP).
 - C. Continuous mandatory ventilation (CMV).
 - D. Synchronous intermittent mandatory ventilation (SIMV).

16. How does underwater sealed drainage prevents air from re-entering pleural space during inspiration?
- A. Through one-way valve.
 - B. Through capillary filtration pressure.
 - C. Through negative intrathoracic pressure.
 - D. Through continuous pleural fluid circulation into bronchioles.
17. Identify the reason for liquid oxygen source containing thermally insulating tank.
- A. Need to be boiled to change into gas form.
 - B. To increase oxygen concentration inside the lungs.
 - C. To enhance oxygen absorption in the bloodstream.
 - D. To prevent oxygen from mixing with carbon dioxide in the tank.
18. Select the primary limitation of the traditional "Graded Exercise Therapy" (GET) model when applied to populations with Long COVID.
- A. It overlooks individual symptom responses.
 - B. It is too expensive to implement in rural clinics.
 - C. It fails to address the patient's need for social interaction.
 - D. It focuses on upper limb strength rather than cardiovascular endurance.
19. Find the breathing technique that addresses autonomic imbalance and reduce sympathetic tone.
- A. Box Breathing.
 - B. Rapid panting.
 - C. Forced expiratory huffs.
 - D. Glossopharyngeal breathing.
20. Identify the rationale for using wearable heart rate monitors in the "New Paradigm" of rehabilitation.
- A. To track the number of steps taken daily.
 - B. To replace the need for a physiotherapist.
 - C. To measure the calories burned during exercise session.
 - D. To provide real-time feedback to keep the heart rate below a safe threshold.

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

(a) Define Type 1 Diabetes mellitus (DM). (2 marks)

(b) Explain the physiotherapy guidelines for DM. (6 marks)

(c) "A 12-year-old boy was brought to the clinic with complaints of recurrent swelling and pain in his knees and elbows after minor injuries. His mother reported that the swelling takes a long time to resolve and sometimes occurs without obvious trauma. He also has a history of prolonged bleeding after tooth extraction. His maternal uncle has a similar condition. Blood investigations revealed a deficiency of clotting factor VIII."

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

i. Identify the type of condition presented on the patient. (1 mark)

ii. Justify the etiology of the condition. (3 marks)

iii. List the appropriate physiotherapy intervention for this condition. (8 marks)

Question 2

Mr. A, a 58-year-old male with a history of chronic stable angina and triple-vessel disease, has just been transferred to the cardiac ward. He underwent a major cardiothoracic procedure two days ago involving a median sternotomy. He currently has a chest drain and is being monitored for sternal stability. He reports feeling "hunched over" due to pain at the incision site.

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

- (a) Identify the possible surgery. (1 mark)
- (b) Predict **THREE (3)** possible complications following the surgery. (3 marks)
- (c) Describe **THREE (3)** anatomical structures directly involved in this procedure. (6 marks)
- (d) Discuss **THREE (3)** suitable physiotherapy treatments for him. (6 marks)
- (e) Describe the procedure to sit the patient at the edge of bed. (4 marks)

Question 3

- (a) "A 65-year-old male patient was admitted to the ICU following acute respiratory failure. He is currently sedated and intubated with an endotracheal tube. The ventilator continues to deliver breaths regardless of any patient effort. Oxygen saturation is maintained at 96% with FiO_2 of 0.5. The patient can initiate a breath but has weakened respiratory muscles."

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

- i. Identify the type of ventilator used by the patient.
(1 mark)
- ii. Justify your answer based on (i).
(4 marks)

- (b) "A 58-year-old female patient with a 10-year history of chronic productive cough and progressive shortness of breath was diagnosed with Chronic Obstructive Pulmonary Disease (COPD). She was recently hospitalized due to an acute exacerbation but is now medically stable and referred for a pulmonary rehabilitation programme."

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

- i. Identify **SIX (6)** aims of pulmonary rehabilitation programme.
(6 marks)
- ii. Discuss the phases of pulmonary rehabilitation programme.
(9 marks)

Question 4

(a) Define the following.

i. Tracheostomy.

(2 marks)

ii. Underwater seal drainage.

(2 marks)

(b) Explain about positive pressure ventilator.

(3 marks)

(c) "Miss S, a 35-year-old former marathon runner, is 6 months post-COVID-19 infection. She presents with severe fatigue, "brain fog," and a racing heart rate even with mild exertion. She tries to clean her entire house on certain days, but the following three days she feels extremely exhaustion and body aches."

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

i. Identify the theory that explains how Miss S should stay within her daily energy limits.

(1 mark)

ii. Describe the "3 Ps" strategy to manage her energy effectively.

(6 marks)

iii. Explain **THREE (3)** energy conservation techniques.

(6 marks)

END OF EXAMINATION PAPER