

**BOWEN UNIVERSITY, IWO**  
**B. PHYSIOTHERAPY PROGRAMME**  
**2022/2023 SESSION FIRST SEMESTER EXAMINATION**  
**PST 517: INTENSIVE CARE PHYSIOTHERAPY**

**Date: 16/05/2023**

**Matric No:.....**

**Time Allowed: 2hours 30 minutes**

**Section A: Answer all questions in the question paper. Answer True or False**

1. Physiotherapy is contraindicated in the presence of any form of arrhythmia \_\_\_\_\_
2. Nasal cannula is an invasive oxygen delivery device \_\_\_\_\_
3. Continuous Positive Airway pressure can be delivered both invasively and non-invasively \_\_\_\_\_
4. Nasopharyngeal tube is a routine device used for intubation \_\_\_\_\_
5. Low Peak Inspiratory pressure may cause hypoventilation \_\_\_\_\_
6. On a ventilator setting, a higher tidal volume is indicated in a patient with non-compliant lung \_\_\_\_\_
7. Controlled mechanical ventilation is used for short term ventilator need \_\_\_\_\_
8. In pressure support ventilation, the ventilator delivers a set breath after patient initiated breath. \_\_\_\_\_
9. The most sensitive indicator of clinical deterioration in a critically ill patient is respiratory rate \_\_\_\_\_
10. Assist control mode of mechanical ventilation can potentially cause hyperventilation \_\_\_\_\_

**Section B: Answer all questions in the answer booklet provided.**

- 1 a) A 50-year-old woman was admitted to the intensive care unit (ICU) two weeks ago following a major bowel surgery. There were surgical complications which required follow-up surgeries and prolonged mechanical ventilation.
  - i. Discuss briefly two (2) effects of anesthesia on her respiratory, cardiovascular, and musculoskeletal system (12 marks)
  - ii. State four (4) complications this patient can develop due to prolonged mechanical ventilation (2 marks)
- b) A 35-year man was admitted to the ICU following head injury with GCS-13/15, SpO<sub>2</sub>- 92%, RR-24cpm. The patient presented with increase mucus secretions, reduced chest expansion, and increased work of breathing.
  - i. Mention four (4) principles you will incorporate in the management of this patient. (2 marks)
  - iii. Highlight two (2) physiotherapy techniques you will implement to address each presentation of this patient (6 marks)
- c) Mr AW is a 35-year-old man who was admitted into in intensive care unit on account of head injury following road traffic accident. Patient became unconscious immediately after the incident and the level of consciousness on Glasgow Coma Scale is presently 6/15 (EO-2; VR-2; MR-2). On assessment the following observations were made; vital signs are stable; chest is clear and patient is spastic
  - i. Describe your plan and means for neurological system intervention in this patient (8 marks)
  - ii. What are the features of decebrate and decorticate postures. (4 marks)

- d) You have been invited to co-manage a 40 year old woman who sustained C3 ASIA A spinal cord injury secondary to a fall from height. The patient is admitted in the intensive care unit and is on mechanical ventilator. She is a civil servant married to a public secondary school teacher in a monogamous setting with four children. Considering the peculiarities of this condition, discuss the possible ethical issues that may arise from the management of **this** patient? (5 marks)
2. a. Explain the relationship between mean arterial pressure (MAP), intracranial pressure and cerebral perfusion pressure (CPP). (5 marks)
- b. Discuss the significance of the values in (2a) above to a physiotherapist when managing respiratory complications in an head injured patient. (5 marks)
- c. Discuss the importance of monitoring pain in the physiotherapeutic management of patients in the intensive care unit (5 marks)
3. a. Briefly describe Pressure Support Ventilation mode (5 marks)
- b. Describe the process for weaning a patient off the ventilator (4 marks)
- c. Differentiate between hypoxaemic and hypercapnic respiratory failure (4 marks)
4. You have been invited to see a 60 year old man admitted into the ICU on account of Chronic Obstructive pulmonary Disease. Some of the laboratory values of the patient are presented below  
SPO<sub>2</sub> - 98%; Mg<sup>+</sup> - 1.1 mEQ/L; Leukocytes – 3000 cells/mm<sup>3</sup>; Haemoglobin - 10 g/dl;  
Platelets - 140,000k/UL; PaCO<sub>2</sub> - 50mmHg; pH - 7.2  
Interpret these findings and explain how these findings may affect your management of this patient (14 marks)
5. A 50 year old man sustained flame burns injury to the face, neck and upper chest. He has been admitted into the burns unit for management
- a. Mention three (3) complications that may result from this injury. (3 marks)
- b. Outline three (3) aims of physiotherapy management in **THIS** patient and the means for achieving the **stated** aims (6 marks)