



(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

(MMUST)

**SCHOOL OF NURSING MIDWIFERY AND PARAMEDICAL
SCIENCES**

UNIVERSITY EXAMINATIONS 2022/2023 ACADEMIC YEAR

**THIRD YEAR FIRST TRIMESTER FOR THE DEGREE OF BACHELOR OF
SCIENCE IN NURSING**

MAIN EXAMINATION

COURSE CODE: NCD 313

COURSE TITLE: *NEPHROLOGY AND CRITICAL CARE NURSING*

DATE: THURSDAY 13TH APRIL 2023

Time: 8:00AM-11:00AM

INSTRUCTIONS TO CANDIDATES

All questions are compulsory

DURATION: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This paper consists of 5 (Five) printed pages. Please turn over.

PART A: MULTIPLE CHOICE QUESTIONS (20 marks)

1. Suctioning a mechanically ventilated patient should be done
 - a. Every two hours.
 - b. Only when it is clinically indicated.
 - c. If the patient has a temperature $> 102^{\circ}$ F.
 - d. When the patient is receiving sedation with a benzodiazepine.
2. The critical care nurse recognizes that an ideal plan for family involvement includes:
 - a. A family member at the bedside at all times
 - b. Allowing family at the bedside at preset, brief intervals.
 - c. An individually devised plan with family involved with care and comfort measures.
 - d. Restriction of visiting in the ICU (Intensive Care Unit) because the environment is overwhelming to visitors.
3. An early sign of acute respiratory failure is
 - a. Coma
 - b. Cyanosis
 - c. Restlessness
 - d. Paradoxical breathing
4. The oxygen delivery system chosen for the patient in acute respiratory failure should:
 - a. Always be a low-flow device, such as a nasal cannula
 - b. Correct the PaO₂ to a normal level as quickly as possible.
 - c. Administer positive pressure ventilation to prevent CO₂ narcosis.
 - d. Maintain the PaO₂ at 60mmHg or greater at the lowest O₂ concentration possible.
5. In a critically ill patient with "Hyperkalemia related to decreased renal excretion secondary to potassium conserving diuretic therapy," an appropriate expected outcome would be which of the following?
 - a. Bowel motility will be restored within 24 hours after beginning supplemental K⁺
 - b. Electrocardiogram (ECG) will show no cardiac arrhythmias within 48 hours after removing salt substitutes and other potassium – rich foods from diet.
 - c. ECG will show no cardiac arrhythmias within 24 hours after beginning supplemental K⁺.
 - d. Bowel motility will be restored within 24 hours after eliminating salt substitute and other K⁺ - rich foods from the diet.
6. A patient is admitted to the ICU after neurosurgical removal of a pituitary tumor, the main priority in the postoperative care plan is:
 - a. Strict restriction of fluids
 - b. Accurate monitoring of intake and output.
 - c. Administration of hypertonic fluids.
 - d. Initiation of diuretic therapy.

7. An 18 year old patient is admitted to the ICU after sustaining closed head trauma. The critical care nurse observes otorrhea. Which nursing intervention is appropriate at this time?

- a. Apply pressure at the area.
- b. Apply gentle suction
- c. Assess the drainage for the presence of glucose
- d. Pack the ear firmly with sterile dressings.

8. A 25 year old patient in the ICU has a generalized tonic – clonic seizure. After the seizure has subsided, the critical care nurse expects the patient to exhibit which of the following characteristic behavior?

- a. Restlessness
- b. Lethargy
- c. Automatism
- d. Incontinence

9. In a patient with suspected mild hypoglycemia, what is the first intervention the critical care nurse should implement?

- a. Give intravenous glucose STAT.
- b. Obtain blood glucose level.
- c. Determine last insulin dose and time administered.
- d. Determine last oral intake.

10. Regarding electrocardiography, ECG chest leads/precordial lead includes:

- a. V1 V2 V6
- b. V1 V3 aVR
- c. aVR, aVF, aVL
- d. I, II, III

11. The essence of critical care is:

- a) Showing up for work everyday
- b) The balance between oxygen supply and demand
- c) The balance between beer and kielbasa
- d) None of the above

12. Determinants of cardiac output include:

- a) Heart and rate rhythm
- b) Preload and after load
- c) Contractility
- d) All of the above

13. Oxygen supply to the body is determined by:

- a) Cardiac output
- b) Hemoglobin concentration
- c) Oxygen saturation
- d) A, B, and C
- e) Wasserott's

14. Client receiving a transfusion of packed red blood cells begins to vomit. The client's blood pressure is 90/50 mm Hg from a baseline of 125/78 mm Hg. The client's temperature is 100.8 ° F orally from a baseline of 99.2 ° F. The nurse determines that the client may be experiencing which complication of a blood transfusion?

- a. Septicemia
- b. Hyperkalemia
- c. Circulatory overload
- d. Delayed transfusion reaction

15. The critical care nurse recognizes that an ideal plan for caregiver involvement includes

- a. Allowing caregivers at the bedside at preset, brief intervals.
- b. A caregiver at the bedside at all times.
- c. Restriction of visiting in the ICU because the environment is overwhelming to caregivers.
- d. An individually devised plan to involve caregivers with care and comfort measures.

16. The nurse wants to assess the oxygenation status of a patient who has been experiencing a gastrointestinal bleed. How will the nurse complete this assessment? Select all that apply.

- a. Use pulse oximetry
- b. Send a blood sample for arterial blood gas analysis
- c. Auscultate lung sounds
- d. Evaluate cardiac rhythm strip
- e. Calculate mean arterial pressure

17. The intensive care unit (ICU) nurse educator will determine that teaching about arterial pressure monitoring for a new staff nurse has been effective when the nurse

- a. Balances and calibrates the monitoring equipment every 2 hours.
- b. Positions the zero-reference stopcock line level with the phlebostatic axis.
- c. Ensures that the patient is supine with the head of the bed flat for all readings.
- d. Rechecks the location of the phlebostatic axis when changing the patient's position.

18. Accurate hemodynamic readings are possible with the patient's head raised to 45 degrees or in the prone position. The anatomic position of the phlebostatic axis does not change when patients are repositioned. What are appropriate nursing interventions for the patient with delirium in the ICU? (Select all that apply)

- a. Use clocks and calendars to maintain orientation.
- b. Encourage round-the-clock presence of caregivers at the bedside.
- c. Sedate the patient with appropriate drugs to protect the patient from harmful behaviors.
- d. Silence all alarms, reduce overhead paging, and avoid conversations around the patient.
- e. Identify physiological factors that may be contributing to the patient's confusion and irritability.

19. Sodium bicarbonate is usually administered in diabetic ketoacidosis if?

- a) Arterial pH is < 7.0
- b) Arterial pH is < 7.1
- c) Serum bicarbonate is < 5 mEq/L
- d) Arterial pH is < 7.25
- e) A, B, and C

20. Most respiratory emergencies are due to a failure of?

- a) Perfusion
- b) Ventilation
- c) Diffusion of gases
- d) All of the above

PART B: SHORT ANSWER QUESTIONS 40MARKS

1. State five (5) indications for admission of a patient to a critical care unit (CCU). (8 marks)

2. List four common causes of fluid volume deficit and fluid volume overload. (8 marks)

3. Interpret the following acid base balance disorders. (8 marks)

PH 7.50 PCO₂ 30mmHg HCO₃ 26 mmol/L?

PH 7.30 PCO₂ 42mmHg HCO₃ 20 mmol/L?

PH 7.48 PCO₂ 42 mmHg HCo₃ 32 mmol/L?

Ph 7.29 PCO₂ 55 mmHg HCO₃ 26 mmol/L

4. By use of a diagram identify the waveforms found in a normal ECG. (8 marks)

5. State at least FOUR complications associated to mechanical ventilation? (8mrks)

SECTION C: LONG ANSWER QUESTIONS 40 MARKS

1. Mr. Saru who is 50 years and weighs 70Kgs has been admitted to ICU with burns to his trunk, both right and left arms and the neck from an explosion.

- i. State the seven concepts of critical care nursing?(5mrks)
- ii. Describe three patient barriers to pain assessment and management in critical care environment? (5mrks)
- iii. Discuss the management of Mr. Saru while in ICU?(10marks)

2. Mr. Len is admitted to ICU with a diagnosis of traumatic brain injury, fractures on the right tibia and left femur secondary to road traffic accident one day ago. CT scan confirms Arachnoid hemorrhage.

- i. Discuss the nursing management of Mr. Len while admitted in ICU. (10 marks)
- ii. Describe any two ethical principles that would guide the care of Mr. Len in ICU. (10 marks)