



*(University of Choice)*

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY**

**(MMUST)**

**SCHOOL OF NURSING MIDWIFERY AND PARAMEDICAL  
SCIENCES**

**UNIVERSITY EXAMINATIONS**

**2021/2022 ACADEMIC YEAR**

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

**SUPP/SPECIAL EXAM**

**COURSE CODE: NCD 313 /NCN 416**

**COURSE TITLE: *NEPHROLOGY AND CRITICAL CARE NURSING***

**DATE: 4<sup>th</sup> October**

**Time: 3:00pm-6:00pm**

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**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.**

**SECTION A: MULTIPLE CHOICE QUESTIONS 20 MARKS**

1. Welcome to the Intensive Care Unit! First things first, the nurses must take handover. This is when the Nurse in Charge on the previous shift make a report on all the patients to the new shift, and patients are allocated to the nurses. But there are so many new words and terms! You and I are allocated a Level 3 patient - but what does this mean?

- a) The patient is well enough to be discharged to the ward
- b) The patient is on the 3rd floor of the hospital
- c) The patient is receiving support for more than one failing organ system
- d) A disease the patient has is at its 3rd stage

2. Once we have received our patient and introduced ourselves, it is very important that the bedspace is checked to ensure all our vital equipment is nearby and in good working order. Which of the following pieces of equipment will probably not be in your bedspace - but must be immediately checked too?

- a) Defibrillator
- b) Bag valve mask and Guedel airways
- c) Oxygen supply (cylinder or 'plumbed in')
- d) Syringe pumps are plugged in to charge

3. There! Satisfied everything in our work space is in order, we must now assess our patient from top to toe. To do this, we use the ABCDE approach. This involves assessing the patient's airway, breathing, circulation, disability, and exposure. Which of the following methods would not generally be used to make an assessment of someones airway and breathing?

- a) Analysing an arterial blood gas sample
- b) Listening to the chest with a stethoscope
- c) Taking a MAP reading
- d) Looking at the ventilator settings

4. Whilst assessing our patient's circulation, it is noted that she has a pulse rate of 112 beats per minute, instead of the normally acceptable 60-100 bpm. Which technical term do we use to describe a heart rate that is going too quickly?

- a) Borborygmus
- b) Tachypnea
- c) Tachycardia
- d) Bradycardia

5. Assessing a patient's disability and exposure status incorporates quite a few things. Which of the following would we not do when assessing this aspect of our patient?

- a) Make a referral for the patient to receive disability benefits
- b) Take a blood glucose reading
- c) Assess the patient's Glasgow Coma Scale
- d) Check any drains, drips or tubes that the patient has

6. I've decided to take an arterial blood sample to analyse. Helpfully, patients in Intensive Care usually have a line or cannula in their artery for easy access so no needles are involved! The machine tells me that the blood analysed has a pH of 7.30, a pCO<sub>2</sub> level of 7.29 kPa, and a pO<sub>2</sub> of 9.8 kPa. But what do all these numbers mean

- a) The oxygen levels are too high, so her oxygen must be turned down

- b) That the patient is building up carbon dioxide, making her blood become acidic
- c) Our patient is doing well and these numbers are normal
- d) That our patient's blood is not clotting properly

7. A client who sustained an inhalation injury arrives in ER. On initial assessment the nurse notes that the client is very confused and combative. The nurse determines that the client is most likely experiencing?

- a) Anxiety
- b) Fear
- c) Pain
- d) Hypoxia

8. A nurse attempts to relieve an airway obstruction on a 3year old conscious child. The nurse performs this maneuver correctly by standing behind the child, placing her arms under the client's axillae and around the client and positioning her hands to deliver thrusts between.

- a) Groin and the abdomen
- b) Umbilicus and the groin
- c) Lower abdomen and the chest
- d) Umbilicus and the xiphoid process

9. The nurse is performing CPR on a 7year old child. The nurse delivers how many breaths per minute the child?

- a) 6
- b) 8
- c) 10
- d) 20

10. A nurse is performing an assessment on a client who was admitted to the hospital with a diagnosis of carbon monoxide poisoning. Which of the following assessments performed by the nurse would primarily elicit data related to a deterioration of the client's condition?

- a) Skin color
- b) Apical rate
- c) Respiratory rate
- d) Level of consciousness

11. Donna is a 43-year-old teacher who was admitted 6 days ago with a ruptured middle cerebral artery (MCA) aneurysm with subarachnoid hemorrhage (SAH). She underwent surgery for aneurysm clipping 12 hours after admission, and has had an excellent post-operative course. However, this morning, she complained of a severe headache, became acutely confused and quickly progressed to unresponsiveness. What is the likely cause for Donna's change of status?

- a) Expansion of her original SAH
- b) Uncal herniation
- c) Cerebral vasospasm

d) Medication reaction

12. Matthew is a 26-year-old who has been admitted to the ICU following a motor vehicle accident. Upon assessment, it is noted that he has a positive Cullen sign. What does this indicate?

- a) Basilar skull fracture
- b) Retroperitoneal hemorrhage
- c) Pelvic fracture
- d) Aortic tear

13. Emily has been admitted to the ICU after being found unconscious on the street. She was found to be in diabetic ketoacidosis (DKA) with a blood sugar of 785. Emily is homeless, has had multiple admissions for DKA, and could benefit from use of an insulin pump, but says she has been repeatedly told, "Those are for rich people." What ethical principle supports Emily's right to have an insulin pump?

- a) Beneficence
- b) Nonmalficence
- c) Justice
- d) Autonomy

14. Tonya is a 44-year-old with a history of substance abuse who has been admitted to the ICU status-post left lateral thoracotomy. She has been clean and sober for 14 years, and discussed her status with her physician prior to her surgery. When she arrives from the operating room, she is in a great deal of pain. Post-operative pain management orders are for acetaminophen only. When you ask the surgeon for an opioid for pain management, he states, "She's an addict. She doesn't need anything for pain." What should your first response be?

- a) Report the doctor to administration
- b) Discuss the situation with the doctor privately
- c) Complain to the other nurses
- d) Ask another doctor to intervene

15. 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.

16. An early sign of acute respiratory failure is

- a) Coma
- b) Cyanosis
- c) Restlessness
- d) Paradoxical breathing

17. 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 PaO<sub>2</sub> to a normal level as quickly as possible.
- c) Administer positive pressure ventilation to prevent CO<sub>2</sub> narcosis.
- d) Maintain the PaO<sub>2</sub> at 60mmHg or greater at the lowest O<sub>2</sub> concentration possible.

18. 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.

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

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

20. Determinants of cardiac output include:

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

#### **SECTION: B SHORT ANSWER QUESTION 40 MARKS**

1. State the characteristics you would consider when interpreting a normal ECG strip? (4 marks)
2. State seven principles of critical care nursing? (7 marks)
3. Describe the parameters of a normal blood gas result? (4 marks)
4. State the equipment required for an ideal ICU set up? (5 marks)
5. State the criteria for admission and discharge of a patient to and from a critical care unit (CCU). (8 marks)
6. State at least FOUR complications associated to mechanical ventilation? (4 marks)
7. State the role of a nurse in the management of a patient on mechanical ventilation? (8 marks)

#### **SECTION: C LONG ANSWER QUESTION 40 MARKS**

1. Mohammad aspirated at the time of intubation and develops ARDS with worsening hypoxemia, with SpO<sub>2</sub> of 85% on FiO<sub>2</sub> 0.8 and PEEP 5 cmH<sub>2</sub>O.

- a) What are your priority interventions while managing the patient?
- b) Discuss the challenges of managing a patient on mechanical ventilation?
- c) State three nursing diagnoses and expected outcomes you would use to guide the care of your patient  
Pain, infection, poor perfusion

2. Ms. Tirana is on FiO<sub>2</sub> 0.5 PEEP 5 and PS 15. She has a total minute volume of 12 L and her RR has increased to 36 from 22. She is restless and agitated. Blood gases are: PaO<sub>2</sub> -69, PCO<sub>2</sub>- 49, PH - 7.36, HCO<sub>3</sub> -30

- a) Discuss the invasive and noninvasive monitoring of a patient in the intensive care unit?
- b) What factor would you consider when setting up an intensive care unit?
- c) Describe the ethical dilemmas commonly encountered while managing patients in the intensive care unit? (6 marks)