



(University of Choice)  
**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**SCHOOL OF NURSING MIDWIFERY AND PARAMEDICAL SCIENCES**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**SECOND YEAR SECOND TRIMESTER FOR THE DEGREE OF MASTER OF  
SCIENCE IN ADVANCED NURSING PRACTICE –CRITICAL CARE**

**MAIN EXAMINATION**

**COURSE CODE: NCC8221**

**COURSE TITLE: NEUROLOGY AND NEUROSURGICAL CRITICAL CARE  
NURSING**

**DATE: 26<sup>TH</sup> APRIL 2022**

**TIME: 3:00-6:00PM**

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**INSTRUCTIONS TO CANDIDATES**

All questions are compulsory

**DURATION: 3 Hours**

MMUST observes ZERO tolerance to examination cheating

## LONG ANSWER QUESTIONS 100MARKS

1. A 45-year-old female is being managed in neurointensive critical care unit after a grade 3 subarachnoid hemorrhage (SAH).on assessment she opens the eyes to painful stimulation, mumbles incoherently when stimulated, and does not respond to a verbal command to move but localizes to painful stimulus. The nurse records the patient's Glasgow Coma Scale score as 9

- a) Discuss the comprehensive neurological assessment of a patient in neurointensive critical care unit?(10mrks)
- b) Describe the postoperative care of the patient in ICU after craniotomy?(10mrks)

2. Mrs. Ramirez is a 61 year old female who presents to the Emergency Department (ED) complaining of a headache and fatigue. Her temperature is 37.3°C and nuchal rigidity is noted when trying to flex Mrs. Ramirez is admitted to the ICU. She receives 1g Acetaminophen PO for her fever. One hour after admission to the ICU her neurological status assessment; she is somnolent, oriented x 1, and her pupils are unequal (right larger than left) but reactive to light, The CT scan shows a large amount of edema on the right side her brain, as well as some hydrocephalus. Mrs. Ramirez will need an External Ventricular Drain (EVD). The EVD is inserted successfully and shows an ICP of 17 mmHg. The patient's vital signs are as follows: BP 122/52 MAP 75HR 78 RR 32SpO<sub>2</sub> 96% Room Air Temp 37.5°C

- a) What assessment findings would indicate increasing ICP after removal of the EVD?  
(10mrks)
- b) What nursing interventions would you apply in the management of a patient with an EVD in ICU? (10mrks)

3. Mr. White is a 17 year old male who was injured in a rugby game 3 weeks ago. He sustained a vertebral fracture and complete spinal cord injury at T7. His fracture has been stabilized with rods and screws. The plan is for him to be discharged home in 3 days with home health and family care.

- a) Considering the level of the spinal cord injury, do you anticipate any concern for respiratory weakness? Discuss(10mrks)
- b) What are the possible complications of a spinal cord injury in ICU?(10mrks)

4. A patient with possible cerebral edema has a serum sodium level of 115 mEq/L (115 mmol/L), a decreasing level of consciousness (LOC) and complains of a headache. The patient is put on Mechanical ventilation with a rate and volume to maintain a mild hyperventilation.

- a) Discuss the role of the nurse in evaluating the effectiveness of hyperventilation therapy?(10mrk)
- b) Discuss the immediate action the nurse should accomplish to mitigate the effects of hyponatremia on head injury patients?(10marks)

5. Brain death is the absence of clinical brain function when the proximate cause is known and demonstrably irreversible.

- i. As an advanced nurse practitioner, discuss the steps you would take in confirming brain stem death in icu?(10marks)
- ii. Discuss the ethical dilemmas you would encounter while managing critically ill patients in ICU? (10marks)

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