

**UNIVERSITY OF SWAZILAND****FACULTY OF HEALTH SCIENCES****FINAL EXAMINATION PAPER, DECEMBER 2013**

TITLE OF PAPER: ADVANCED MEDICAL-SURGICAL NURSING III

COURSE CODE: NUR 510

TIME ALLOWED: TWO (2) HOURS

MARKS: 75

THIS EXAMINATION HAS TEN (10) PAGES

**INSTRUCTIONS:**

1. THERE ARE THREE (3) QUESTIONS IN THIS PAPER.
2. ANSWER ALL THREE QUESTIONS.
3. EACH QUESTION IS ALLOCATED 25 MARKS.
4. EACH CORRECT STATEMENT OR FACT WITH SCIENTIFIC RATIONALE CARRIES ONE (1) MARK.
5. WRITE LEGIBLY.

THIS PAPER IS NOT TO BE OPENED UNTIL THE INVIGILATOR HAS GRANTED PERMISSION.

**QUESTION 1**

**Situation:** Mr. Mathala a 37 year old male has been involved in a freak road traffic accident (RTA) where he sustained multiple injuries. He has been admitted in a critical condition to the Intensive Care Unit (ICU) via the operating theatre where he was done a craniotomy for epidural hematoma. Because of the severity of the injuries and surgical intervention (craniotomy) you anticipate that Mr. Mathala will occasionally experience moderate to severe pain, however he has been intubated hence verbal communication is not possible.

- A. As a critical care nurse identify the physiological indicators that will make you conclude that Mr. Mathala is experiencing pain, explain how these occur. (5)
- B. State five (5) and describe the non-pharmacological nursing interventions that you will perform in an effort to relieve Mr. Mathala's severe pain. (10)
- C. Any of the following drugs could be prescribed to control pain:
- (i) Morphine
  - (ii) Mepheridine (Demerol)
  - (iii) Acetaminophen
  - (iv) Naloxone

Specify at least one (1) side-effect of each of the above drugs (1/2 mark each)

- D. Describe four (4) health professional barriers to effective pain assessment and management for Mr. Mathala. (8)

**TOTAL 25 MARKS**

## QUESTION 2

**Situation:** Ms. Mavimbela is a 17 year old female is admitted to the ICU as a referral from the Raleigh Fitkin Memorial Hospital after having been knocked down by a moving truck on the head, she has septicemia, is semi-conscious and passing diarrheal stool, DVT in left leg, and on mechanical ventilation. Her intake in the past 24 hrs has been 4,325mls with an output of 3,775 mls.

Her laboratory results are: Hb – 9.5g/dl, hematocrit – 27.10%, total protein – 51 g/dl, mean corpuscular volume (MCV) – 98.6 femtoliter (80-95 femtoliter), Na 13.4 mEq/L (135-145 mEq/L), k- 4.3 mEq/L (25 – 100 mEq/L), Cl - 10.2 mEq/L (95-105 mEq/L), BUN – 7.3 mg/dl (5 -25 mg/dl), creatinine – 43 mg/dl (0.5 – 1.5 mg/dl)

Her v/s: Pulse – 118 b/min, BP 124/68 mmHg, RR 19 b/min, T<sup>0</sup> – 37.1<sup>0</sup>C.

She receives: NaCl IV with 40mmol KCl added, TPN fresubin original fiber 63 mls/hr, warfarin 5mg PO /NGT, warfarin 5mg Q24h, phenytocin 100mg NGT Q8h, Mannitol and ciprobay (Ciprofloxacin) 500 mg Q12h. Questions 2A and 2B refer to this scenario.

A. State two (2) rationales for prescribing the following for Ms Mavimbela:

- (i) KCl (2)
- (ii) Adding KCl to the IV NaCl (2)
- (iii) Warfarin (Coumadin) (2)

B. What does each of the following indicate, also state the possible consequences of each.

- (i) Pulse (118 b/min) (3)
- (ii) Creatinine level (43mg/dl) (2)
- (iii) Intake and output (3)
- (iv) Hb (9.5 g/dl) (2)

**Situation:** Most critically ill patients have severely disturbed sleep patterns. Insufficient sleep among critically ill patients has been associated with physiologic and psychological stress, and consequently immunosuppression.

C. Describe how immunosuppression occurs among critically ill patients. (9)

**TOTAL 25 MARKS****QUESTION 3**

**INSTRUCTIONS:** For each of the following questions / statements, select the most correct answer and write the letter that corresponds with it in your answer sheet e.g. 1. B

**Situation:** Mrs. Muli is 36 weeks pregnant, a teacher, and has been admitted to the ICU because of seizures which started at home. Relatives report that before the seizures began she was hallucinating and had been on antihypertensive therapy since 28/40 gestation. Records show that she has proteinuria, oedema, and glycosuria.

Questions 1 – 3 relate to the above situation.

1. Which condition is Mrs. Muli likely to be suffering from?
  - A. gestational hypertension
  - B. eclampsia
  - C. chronic hypertension
  - D. abruption placentae
  
2. All of the following could account for edema in Mrs. Muli, **EXCEPT:**
  - A. reduced oncotic pressure
  - B. decreased plasma concentration
  - C. Too much standing at work
  - D. Increased heart rate
  
3. Mrs. Muli has to be monitored for all of the following **EXCEPT:**
  - A. fetal wellbeing
  - B. level of consciousness
  - C. singing ability
  - D. complications

**Situation:** Baby girl Cebe is 8-months of age and has been having difficulty in breathing for the past two days, today laboratory results show that she has hypoxemia.

Questions 4 – 6 relate to the above situation.

4. Hypoxemia could occur as a result of all of the following, **EXCEPT**:

- A. cardiac disease
- B. respiratory disease
- C. vascular disease
- D. positive Rhesus factor

5. When does cyanosis occur?

- A. It occurs when there is an increased hemoglobin level by 10g / 100 mEg/l plasma
- B. It occurs when there is an increased hemoglobin level by 5g / 100ml blood
- C. It occurs when there is a decrease in hemoglobin level by 5g / 100 ml blood
- D. It occurs when there is a decrease in hemoglobin level by 10g / 100 mEg/l serum

6. When is it assumed that cyanosis is decreased by crying in a baby?

- A. when it is of respiratory basis
- B. when it is of cardiac origin
- C. when it has nervous foundation
- D. is related to low hemoglobin level

7. A patient who has coronary artery disease and congestive heart failure shows his physician his advance directive that states he wants to receive cardiopulmonary resuscitation and other forms of life-sustaining treatment. He has deeply held beliefs which suggest that not trying to live is tantamount to committing suicide.

What should the nurse do and say to the patient in response to this?

- A. The nurse should educate the patient about the near futility of CPR under these circumstances.
- B. The nurse might want to ask the patient to explore this further with the chaplain.
- C. The patient's expression of a preference should be explored to understand its origins.
- D. All the above.

8. A patient tells his family that he would never want to be "kept alive like a vegetable". The term "vegetable" should be understood by the nurse to mean:

- A. The patient does not want any heroics or extraordinary treatments.
- B. Pull the plug if the patient is ever in terminal state on a respirator.
- C. If the patient is in a comatose state, let him die.
- D. The nurse should interpret the term as vague and not helpful in advance care planning discussions unless it is clarified.

9. Jose is a 62-year-old man who just had a needle biopsy of the pancreas showing adenocarcinoma. You run into his brother in the hall, and he begs you not to tell Jose because the knowledge would kill him even faster. A family conference to discuss the prognosis is already scheduled for later that afternoon.

The nurse would expect the doctor to handle the situation in which of the following ways?

- A. The doctor should honor the request of the family member who is protecting his beloved brother from the bad news.
- B. The doctor should tell Jose's brother that withholding information is not permitted under any circumstance.
- C. Jose should withhold informing the patient about the pancreatic cancer because of the grave diagnosis.
- D. The doctor should ask Jose how he wants to handle the information in front of the rest of the family, and allow for some family discussion time for this matter.

**Situation:** A 60-year-old man, Mr. Masu, had a heart attack and is admitted to the medical ward with a very poor prognosis. He has been run a series of diagnostic tests, and has been diagnosed acute respiratory failure, Type 1. Questions 10 – 14 relate to this scenario.

10. What has caused Type 1 acute respiratory failure in Mr. Masu?

- (i) Intrapulmonary shunting
- (ii) ventilation/perfusion mismatching
- (iv) alveolar hypoventilation
- (v) extra pulmonary shunting

- A. ii, iii, & iv
- B. iii, ii, & iv
- C. i, ii, & iv
- D. i, ii, & iii

11. What do you expect to characterize Type 1 acute respiratory failure in Mr. Masu?

- A. low PaO<sub>2</sub> and low PaCO<sub>2</sub>
- B. high PaO<sub>2</sub> and low PaCO<sub>2</sub>

C. high PaO<sub>2</sub> and normal PaCO<sub>2</sub>

D. low PaCO<sub>2</sub> and normal PaCO<sub>2</sub>

12. What do you expect to be activated immediately as a result of cerebral tissue hypoxia in Mr. Masu?

A. sympathetic nervous system

B. parasympathetic nervous system

C. cardiovascular system

D. respiratory system

13. There are integumentary changes that will be manifested by Mr. Masu, these include \_\_\_\_\_.

(i) Decreased capillary refill

(ii) Clammy & pale skin

(iii) Edema

(iv) Bleeding

A. i & ii

B. ii & iii

C. i & iv

D. iii & iv

14. Improper patient positioning of Mr. Masu during tube feeding, predisposes him to all of the following, EXCEPT \_\_\_\_\_.

A. pneumonia

B. atelectasis

C. pulmonary embolism

D. aspiration lung disease



**Situation:** A newborn baby X is admitted to the ICU with severe cardiovascular impairment and has been diagnosed as suffering from Tetralogy of Fallot.

Questions 14- 17 relate to the above situation.

15. When placing respiratory support for baby X you have to remember that the baby's epiglottis is at the level of:

- A. Cervical spine 5
- B. Cervical spine 3
- C. Cervical spine 1
- D. Thoracic spine 1

16. The diaphragm of baby X's is:

- A. Dome shaped
- B. More horizontal
- C. More vertical
- D. Oblique

17. It is not advisable for you to insert an airway in baby X who is alert because:

- A. the airway will impede breathing
- B. the tip of the airway will stimulate pharyngospasms
- C. the tip of the airway will stimulate laryngospasms
- D. the tip of the airway will injure the pharynx

18. Tetralogy of Fallot involves all of the following EXCEPT:

- A. an overriding aorta
- B. hypertrophy of the left ventricle
- C. interventricular septal defect
- D. interatrial septal defect

Sleep is important because several physiological processes take place during sleep. Match each of the following processes with the appropriate stage of sleep e.g. 18. F.

Physiological process	Stage of sleep
19. Growth hormone released	A. Stage 4 NREM
20. Gastrointestinal activity declines	B. Stage 1 NREM
21. Skeletal muscles very relaxed	C. Stage 3 NREM
22. Vital signs reach the lowest normal levels	D. REM
23. Gastrointestinal motility increases	
24. Protein synthesis occurs	
25. Vital signs are normal	

NREM – non-rapid eye movement

REM- rapid eye movement