

UNIVERSITY OF SWAZILAND
FACULTY OF HEALTH SCIENCES
FINAL EXAMINATION PAPER, MAY 2014

TITLE OF PAPER: ADVANCED MEDICAL-SURGICAL NURSING IV

COURSE CODE: NUR 511

TIME ALLOWED: TWO (2) HOURS

MARKS: 75

THIS EXAM PAPER HAS FOURTEEN (14) PAGES

INSTRUCTIONS:

1. THERE ARE THREE (3) QUESTIONS IN THIS PAPER.
2. ANSWER ALL THREE QUESTIONS.
3. WRITE LEGIBLY.

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

QUESTION 1

Situation: Mr. Zabo who is estimated to be in his early 70's, was found by public members at the Mbabane bus rank semi-conscious, and they called the Police who took him to the Mbabane Government Hospital where he was received to the ICU via the casualty. On examination he was found to have head injury and is known to be on ART. He is on a ventilator and has been put on dexamethasone and flagyl.

- A. Describe the daily rapid neurological assessment you will conduct on Mr. Zabo. (8)
- B. Which three (3) diagnostic tests will you recommend for Mr. Zabo? (indicate the possible results). (6)
- C. State the classification, effects, and special considerations for Mr Zabo who is on the following:
- (i) Dexamethasone (3)
 - (ii) Flagyl (3)

MARKS 20

QUESTION 2

Ms. Mahle presented to the emergency department (ED) with headache, nausea, vomiting, palpitations, severe dyspnea, diaphoresis, and tachycardia that was treated with metoprolol. Her electrocardiogram (ECG) showed ST-segment depression. The patient was treated with aspirin, heparin, and intravenous metoprolol and transferred to the ICU for invasive diagnostic procedures. During transport, her condition worsened with development of pulmonary edema requiring intubation and mechanical ventilation. Subsequently, however, she became hemodynamically unstable and, on two (2) occasions, required inotropic support and a short episode of cardiopulmonary resuscitation.

- A. Identify the type of shock Ms. Z is experiencing. (2)
- B. Describe the pathophysiology of the condition in A. (8)
- C. Because Ms. Mahle is on aspirin and heparin, what will you closely observe her for? (2)

Situation: Joyce, age 45, was admitted to the emergency room following a major automobile accident in which her husband was killed. She had massive abdominal injuries and a fractured femur. She was taken immediately to surgery for repair of a lacerated liver and perforated ileum. She received two (2) units of blood during surgery and two (2) units while she was in the recovery room. The fifth unit of blood was discontinued in ICU because she developed a transfusion reaction.

On the day after surgery, her urine output declined to 10-20 ml/hr. Increasing her fluid intake with plasma expanders did not increase her urine output. Laboratory results indicated serum sodium of 170 mg/dl, BUN 70 mg/dl, and serum creatinine 12 mg/dl.

Her urine output stabilized at 20-25 ml/hr on the third day after surgery. She was diagnosed as having acute tubular necrosis.

Because of a persistently elevated serum potassium and severe hypertension (BP 190/120), she was started on hemodialysis using an external cannula. She resented all the “drains” in her body and expressed a desire to die.

- D. What are the possible causes of acute tubular necrosis that Joyce developed? (3)
- E. What are the clinical indicators that Joyce is in the oliguric phase of acute renal failure? (2)
- F. What are the priority nursing diagnoses for Joyce? (4)
- G. How could you assist Joyce in dealing with her depression? (2)
- H. Joyce wants to know if she is going to be on hemodialysis for the rest of her life. How would you answer this question? (2)

MARKS 25

QUESTION 3

SITUATION: Mr. Mafa who is 47 years old has been admitted to the Intensive Care Unit after being involved in a horrific motor vehicle accident, and sustained head and chest injuries. He has been admitted to the Intensive Care Unit (ICU) in a critical state and is in coma.

Questions 1 – 4 relate to the above situation.

1. Utilizing the Glasgow coma scale, what is the most likely score that you will obtain from Mr. Mafa?
 - A. 15
 - B. 10
 - C. 7
 - D. 5
 - E. 3

2. Mr. Mafa's motor function shows decerebration, which means that he _____
 - A. Spontaneously abnormally extends
 - B. Abnormally flexes in response to noxious stimuli
 - C. Spontaneously and normally flexes
 - D. Flexes normally to noxious stimuli
 - E. Withdraws the limb in response to noxious stimuli

3. Mr. Mafa has been scheduled to undergo several skull radiologic diagnostic studies. Among the following which test will reveal greater detail?
 - A. X-ray
 - B. Computed tomography [CT]
 - C. Lumbar puncture
 - D. Magnetic resonance imaging [MRI]
 - E. Ultrasound

4. Mr. Mafa has been scheduled for a cisternal puncture in which a hollows needle will be inserted: [select all that apply]

- (i) Between L3 and L4
 - (ii) into the cisterna magna
 - (iii) between L4 and L5
 - (iv) into the subarachnoid space between the cerebellum and medulla oblongata
 - (v) between T4 and T5
- A. i & iii
 - B. ii & iii
 - C. ii & iv
 - D. i only
 - E. iv only

SITUATION: you have Ms. June as your client who is sustained head injury in an MVA, and this client has a urine output of about 4 litres per day, has hypothermia and metabolic acidosis. The ICU doctor suspects that Ms. June may be experiencing Diabetes Insipidus in addition to the head injury. However the family reports that Ms. June has no history of Diabetes Insipidus.

Questions 5 – 7 relate to the above situation.

5. As an ICU nurse you aware that the Diabetes Insipidus in Ms. June could result from:

- A. Rapid infusion rate
- B. infusion with isotonic fluids
- C. injury to the hypothalamus
- D. injury to the medulla oblongata
- E. urine retention

6. Ms. June is likely to present with which of the following?

- (i) Urine osmolality of 600 mOsm/kg water
- (ii) Serum sodium above 180 mEq/L
- (iii) Urine specific gravity of 1.020
- (vi) Serum osmolality of 320 mOsm/kg water

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

7. Which will be your priority nursing diagnosis for Ms. June that requires your immediate intervention?

- (i) Anxiety related to threat to body image
- (ii) Fluid volume deficit related to compromised regulatory mechanism
- (iii) Decreased cardiac output related to preload deficit
- (iii) Knowledge deficit related to lack of previous exposure to information

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

SITUATION: Mr. B a 55 year old male is admitted and presents with rapidly deteriorating liver function, altered mentation and coagulopathy. He was done a comprehensive physical examination and underwent several diagnostic tests. His conclusive diagnosis was acute liver failure (fulminant hepatic failure), and the history does not seem to reveal the possible cause of the disorder.

Questions 8 – 11 relate to the above situation.

8. As an ICU you are aware that all of the following medication could have predisposed Mr. B to acute liver failure, EXCEPT:

- A. Acetaminophen
- B. Phenytoin
- C. Rifampicin
- D. Halothane
- E. Ibuprofen

9. What will you expect Mr. B to also present with?

- (i) Increased prothrombin time
 - (ii) Decreased serum bilirubin
 - (iii) Increased intracranial pressure
 - (iv) Hypoalbuminemia
- A. ii & iv
 - B. i, ii, & iii
 - C. ii & iii
 - D. i, iii, & iv
 - E. ii, iii, & iv

10. Mr. B has a blood pressure [BP] = 100/60 mm Hg and an intracranial pressure [ICP] = 15 mmHg. What is his cerebral perfusion pressure [CPP]?

- A. 100 mm Hg
- B. 70 mm Hg
- C. 58 mm Hg
- D. 35 mm Hg

11. Is Mr. B's CPP within the normal range?

- A. Yes
- B. No

12. What accounts for dull and puffy appearance in a client who has myxedema coma?

- A. accumulation of hyaluronic acid
- B. accumulation of lactic acid
- C. accumulation of uric acid
- D. accumulation of glucuromic acid

13. All of the following are reduced in a client, who suffers from myxedema coma, EXCEPT:

- A. Thyroxin
- B. Oxytocin
- C. Anti-diuretic hormone
- D. Erythropoiesis
- E. Gluconeogenesis

14. Which of the following is **NOT** a modifiable cause of hospital acquired anemia?

- (i) Continual intravenous infusion
- (ii) Impaired erythropoiesis
- (iii) Nosocomial infection
- (iv) Coagulopathies

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

15. Diabetic ketoacidosis is marked by the presence of which ketone bodies?

- (i) Acetate
- (ii) Acetone
- (iii) Acetoacetate
- (iv) Beta-hydroxybutyrate
- (v) Acetoacetone

- A. I, ii, & iii
- B. ii, iii, & iv
- C. iii, iv, & v
- D. I, iii, iv
- E. ii, iv, & v

16. What marks the presence of acetone in a client suffering from diabetes ketoacidosis?

- A. Fruity breath
- B. Ammonia breath
- C. Halitosis
- D. Garlic breath
- E. Fecal breath

17. Which is likely to be the initial intravenous solution that you will administer to a client who has diabetic ketoacidosis?

- A. 5% dextrose in water
- B. 0.9% NaCl
- C. Lactated Ringer's lactate
- D. Plama-Lyte
- E. Mannitol

18. All of the following could cause disseminated intravascular coagulation, EXCEPT:

- A. Incomplete abortion
- B. Massive burns
- C. Metabolic acidosis
- D. Metabolic alkalosis
- E. Immobility

19. What do the laboratory tests assess for in clients suffering from disseminated intravascular coagulation?

- (i) Impaired regulatory function
- (ii) Increased fibrinolytic activity
- (iii) Decreased fibrinolytic activity
- (iv) Increased coagulant activity
- (v) Decreased coagulant activity

A. i, iii, & iv

B. ii, iii, & v

C. iii & v

D. i, ii, & iv

E. ii & iv

20. When can you conclude that a patient is experiencing renal failure?

- (i) Creatinine level 5.2 mg/dL
- (ii) BUN 50 mg/dL
- (iii) BUN to creatinine ratio of 10:1
- (iv) Elevated creatinine in a patient who is on ascorbic acid
- (v) Elevated BUN in a patient who is on furosemide

A. i & ii

B. ii & iii

C. iii & iv

D. iv & v

E. I & iv

21. BUN is elevated in all of the following patients, EXCEPT:

- A. Dehydration
- B. High protein diet
- C. GIT bleeding
- D. Severe liver damage
- E. pre-renal failure

22. All of the following are indicative of overhydration, EXCEPT:

- A. Irritated cough
- B. Dyspnea
- C. Jugular-vein engorgement
- D. Chest rales
- E. Thready pulse

23. All of the following are true about chemical burns, EXCEPT that:

- A. You must remove the chemical from the person
- B. They are characterized by necrotic tissue
- C. They are characterized by tissue coagulation
- D. They are usually caused by acids

The statements and concepts below relate to burns, match the statements in column A with items in column B, e.g. 11. E

Column A	Column B
24. Decreased colloid osmotic pressure	A. smoke inhalation
25. Increased capillary permeability	B. pain
26. Collagen fibrils appear	C. adynamic ileus
27. Infection	D. 6 – 12 hours
28. Hypoxia	E. albumin lost to interstitial spaces
29. Shivering	F. immunoglobulins decreased
30. Potassium shift	G. hypovolemic shock