UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

FINAL EXAMINATION PAPER, MAY 2016

TITLE: ADVANCED MEDICAL SURGICAL NURSING IV

COURSE CODE: NUR 511

TIME ALLOWED: TWO (2) HOURS

MARKS: 75

NUMBER OF PAGES: THIS EXAMINATION PAPER HAS NINE (9) PAGES

INSTRUCTIONS:

1. **THERE ARE THREE (3) QUESTIONS IN THIS PAPER**
2. **ANSWER ALL THREE (3) QUESTIONS.**
3. **EACH QUESTION IS ALLOCATED 25 MARKS**
4. **WRITE LEGIBLE**

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

QUESTION 1

Instructions: For each of the following statements / questions choose the most appropriate answer, and write it in your answer sheet e.g. 1. A

Statement: The renal system is one of the important systems in a critically ill patient's organ-systems because it performs many functions.

Questions 1 – 7 relate to the above statement.

1. Which of the following are the roles of the kidneys in the body?
   (i) Maintain acid-base balance
   (ii) Blood pressure regulation
   (iii) Vitamin D deactivation
   (iv) Metabolic wastes elimination
   A. i & ii
   B. i, ii, & iii
   C. i, ii, iii, & iv
   D. i, ii, & iv

2. In which developmental stage would you normally expect a decrease in serum creatinine level?
   A. Newborn
   B. Child
   C. Middle-aged adult
   D. Elderly

3. An individual's serum creatinine level is proportional to that persons _____.
   A. Body weight
   B. Bone weight
   C. Muscle weight
   D. Bone density

4. What influences the body's serum urea (BUN) level?
   (i) Excretion ability of the kidneys
   (ii) Amount of protein in the diet
   (iii) Body fluid volume
   (iv) Level of protein breakdown
   A. i, ii, iii, & iv
   B. i, & ii
   C. i, ii, & iii
   D. i, ii, & iv

5. Potassium (K) is one of the primary intracellular electrolytes. What level of renal function is sufficient for the maintenance of potassium balance in the body?
   A. 1200 ml urine output / 24 hrs
   B. 800 ml urine output / 24 hrs
   C. 600 ml urine output / 24 hrs
   D. 400 ml urine output / 24 hrs

6. If a patient receives heparin with his/ her haemodialysis, how you would expect his/ her serum potassium level to be?
   A. Increased
   B. Normal
   C. Decreased
   D. Increased and sometimes decreased

7. Which serum potassium level is likely to cause cardiac arrest in a patient?
   (i) Less than 2.5 mEq/l
   (ii) Less than 3.5 mEq/l
   (iii) Greater than 4.5 mEq/l
   (iv) Greater than 7.0 mEq/l
      A. i & iii
      B. i & iv
      C. ii & iv
      D. ii & iii

8. Which of the following conditions / interventions place the patient at risk for decreased serum sodium level?
   A. Continuous infusion with 0.9% NaCl
   B. Moderate sodium diet
   C. Continuous infusion with 5% dextrose in water (D_5W)
   D. Sparse perspiration

9. In which electrolyte imbalance(s) is the Chvostek's sign present?
   (i) Hypomagnesaemia
   (ii) Hypocalcemia
   (iii) Hypernatremia
   (iv) Hypophosphatemia
      A. i & ii
      B. ii & iii
      C. iii & iv
      D. i & iii

10. In which electrolyte imbalance is the Trousseau's sign present?
    A. Hypomagnesaemia
    B. Hypocalcemia
    C. Hypernatremia
    D. Hypophosphatemia

Scenario: Mr. X is a 59 year old male who weighs 64 kg; he suffers from chronic renal failure, and hypertension. Mr. X has hemodialysis twice a week, at the Mbabane Government Hospital. Questions 11 – 16 relate to the above scenario.

11. Hemodialysis performs all of the following, EXCEPT,
    (i) Not compensating for kidney metabolic function
    (ii) Healing renal disorder
    (iii) Compensating for lost endocrine kidney function
    (iv) Preventing death
    A. i & ii
    B. ii & iii
    C. iii & iv
    D. i & iv

12. Hemodialysis will remove water from Mr. X's body by which principle(s)?
    (i) Osmosis
    (ii) Ultrafiltration
    (iii) Diffusion
    (iv) Filtration
    A. i & ii
    B. i. ii, & iii
    C. ii, iii, & iv
    D. i, ii, & iv

13. By which principle(s) does a hemodialysis remove solutes from Mr. X's body?
    (i) Osmosis
    (ii) Ultrafiltration
    (iii) Diffusion
    (iv) Filtration
    A. i & ii
    B. i, ii, iii, iv
    C. iii only
    D. i only

14. What is Mr. X's daily recommended protein intake?
    A. 16 g
    B. 32 g
    C. 64 g
    D. 48 g

15. On each day of Mr. X's hemodialysis, when would you advise him to take his antihypertensive medications?
    A. Before he undergoes hemodialysis
    B. During hemodialysis
    C. After hemodialysis
    D. Anytime, before or during hemodialysis

16. During hemodialysis, which is the MOST common complication that you would monitor Mr. X for?
    (i) Gastric ulcers
    (ii) Infection
    (iii) Dialysis disequilibrium
    (iv) Hypotension
    A. i & iv
    B. ii & iii
    C. iv only
    D. iii only

Scenario: Mr. N a 28 year old male was involved in a motor vehicle accident on Saturday and sustained a depressed skull fracture. He was admitted to intensive care unit (ICU) through the operating theatre (OT) where a craniotomy was done, he is in coma.

Questions 17 – 22 relate to the above scenario.

17. You conducted a rapid neurological assessment on Mr. N. What is the possible score from the Glasgow Coma Scale that you are likely to obtain from your assessment?
    A. 6
    B. 8
    C. 10
    D. 14

18. How would you determine Mr. N. motor response to noxious stimuli?
    (i) Rub his sternum
    (ii) Apply pressure on his nail bed
    (iii) Pinch his nipple
    (iv) Pinch his trapezius muscle
    A. i & ii
    B. iii & iv
    C. ii & iv
    D. iii & iv

19. You had positioned Mr. N. in the neutral position, with the head elevated about 30^0. Later you observed that his upper extremities were abducted and flexed at the fingers, wrist and arm. What is this position referred to?
    A. Decerebrate
    B. Decorticate
    C. Torticollis
    D. Scoliosis

20. What is the scientific rationale of elevating Mr. N by 30^0?
    (i) Facilitate breathing
    (ii) Enhance venous drainage
    (iii) Reduce hemorrhage
    (iv) Makes it easier for hospital staff to monitor him
    A. i & ii
    B. iii only
    C. i, ii, & iii
    D. i, ii, iii & iv

21. On assessing Mr. N. you note that he has pinpoint non-reactive pupils. What could account for this response?
    A. Loss of sympathetic control
    B. Oculomotor nerve compression
    C. Instillation of atropine
    D. Optic nerve compression

22. Mr. N's blood pressure is 210 / 100 mm Hg, temperature 37.4^0C. What is this blood pressure indicative of?
    A. Increasing intracranial pressure
    B. Hypertension
    C. Dysrhythmias
    D. Decreasing intracranial pressure

23. In spite of the blood pressure of 210 / 100 mm Hg, Mr. N is presenting with pallor. It could be possible that Mr. N is also getting into_____ shock.
    (i) Neurogenic
    (ii) Cardiogenic
    (iii)Hypovolemic
    (iv)Septic
    A. i & iii
    B. i, ii, & iii
    C. i, ii, iii, & iv
    D. ii & iii

Instructions: For each of the following statements / questions choose the most appropriate answer, and write it in your answer sheet e.g. **1. True**

24. Septic shock should present with a normal or high cardiac output. True /False

25. Hypovolemic shock should typically present with a reduced cardiac output. True /False

QUESTION 2

Scenario: Joyce, aged 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 units of blood during surgery and two units while she was in the recovery room. The fifth unit of blood was discontinued in the intensive care unit (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 and blood did not increase her urine output. Laboratory results indicated an elevated urinary sodium, BUN 70 mg/dl, and serum creatinine 4 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 190/140 mmHg), she was started on hemodialysis using an external cannula. She resented all the "tubing" in her body and expressed a desire to die.

A. What are two (2) possible causes of acute tubular necrosis that Joyce developed? (2)

B. What are clinical indicators reflecting that Joyce is in the oliguric phase of acute renal failure? (2)

C. What are four (4) priority nursing diagnoses for Joyce? (4)

D. What are four (4) critical nursing interventions indicated when caring for Joyce? (4)

E. How could you assist Joyce in dealing with her depression? (3)

F. What are the usual indications for using hemodialysis in the management of acute renal failure? (2)

G. 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)

H. What is the nursing care of the external cannula when not in use? (4)

I. What is the goal of medical and nursing management of Joyce? (2)

TOTAL = 25 MARKS

QUESTION 3

Scenario: Mr. T is a 43 year old male who was involved in a motor vehicle accident and suffered cranial injury. He has been done a craniotomy and is semi-conscious.

Discuss his postoperative nursing management, considering:

A. (i) Protection from injury (5)

(ii) Protection from infection (6)

(iii) Preventing increased intracranial pressure (5)

(iv) Health education to client and family (5)

B. Discuss two (2) intravenous solutions that are likely to be administered to Mr. T (4)

TOTAL = 25 MARKS