UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

FINAL EXAMINATION PAPER

SEMESTER 2 MAY 2008

COURSE TITLE   :ADVANCED MEDICAL-SURGICAL NURSING
                         SCIENCE IV

COURSE CODE   :NUR 511

TIME ALLOWED   :2 HOURS

TOTAL MARKS   :75

INSTRUCTIONS   1. ANSWER ALL QUESTION.

                         2. READ QUESTIONS CAREFULLY.

                         3. EACH QUESTION CARRIES 25 MARKS

                         4. QUESTION 1 IS A MULTIPLE CHOICE
                             TYPE, SELECT THE BEST ANSWER E.G. 1 -
                             a.

                         5. EACH CORRECT FACT IS WORTH ½ a
                             MARK UNLESS INDICATED OTHERWISE.

                         6. WRITE CLEARLY.

*THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION HAS BEEN
GRANTED BY THE INVIGILATOR.*

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QUESTION 1

Scenario : A 25 year old male is admitted to the intensive care unit with a diagnosis of brain stem contusion. Two days after admission the patient is consistently thirsty. You note that the urine output is nearly 2000ml in 8hours with an intake of 950ml. Blood pressure is 140/74Hg, pulse 84 beats/min, respiratory rate 22breaths/min. The following laboratory data are available:

Serum		**Urine**	
Na^+	155mEq/L	Na^+	14mEq/L
K^+	3.7mEq/L	Osmolality	312mosm
Cl^-	114 mEq/ L	Specific gravity	1.005
HCO_3^-	23mEq/L		

1. Based on the above information, which condition is likely to be developing?
    a. Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
    b. Adult onset diabetes mellitus
    c. Anterior pituitary stimulation
    d. Diabetes insipidus

2. Which treatment could be expected to be given to this patient
    a. Desmopressin acetate (BDAVP), / desamino 8-D-arginine – vasopressin)
    b. D_5W in a 200ml/hr fluid bolus
    c. Diuretics
    d. Fluid restriction

3. **Scenario :** A patient is admitted to the intensive care unit with a diagnosis of SIADH (syndrome of inappropriate antidiuretic hormone secretion). Which laboratory data would be expected if this diagnosis is correct?
    a. Hyponatremia
    b. Hypernatremia
    c. Increased serum osmolality
    d. Hyperkalemia

4. A common clinical finding of SIADH may include which symptoms?
    a. Mental status changes
    b. Tachycardia
    c. Polyuria
    d. Polydipsia

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Scenario: A 51 year old female is admitted to your unit with hypotension, bradycardia and decreased level of consciousness. Her core temperature is 35.5^0C and no history is available regarding previous medical problems. She appears to be overweight, with dry, scaly skin and puffy face and lips. Blood gas analysis reveals the following information:

pH	7.25
$PaCO_2$	56mmHg
PaO2	63mmHg

Shortly after admission, she has a grand mal seizure. She is intubated and placed on mechanical ventilation.

5. Based on the above information, which condition is likely to be developing?
    a. Acute congestive heart failure (CHF)
    b. Adult respiratory distress syndrome (ARDS)
    c. Thyroid crisis
    d. Myxedema

6. Which treatment would be required to correct the condition?
    a. Dobutamine (50mg/kg/min)
    b. Cooling blanket
    c. Levothyroxine
    d. Calcitonin (2mg/kg/hr)

Scenario : A 27 year old male is admitted to your unit with shortness of breath, weight loss, and non productive cough. Current vital signs are as follows;

Blood pressure	118/74
Pulse	114 beats/min
Respiratory rate	34 breaths/min
Temperature	38.4^0C

HIV (human immunodeficiency virus) serum testing is positive

7. Based on the above information, which condition is likely to be present?
    a. Kaposi's sarcoma
    b. Non-Hodgkin's lymphoma
    c. Klebsiella pneumonia
    d. *Pneumocystis carinii* pneumonia

8. What is the likely cause for the shortness of breath?
    a. Non –cardiogenic pulmonary oedema
    b. Lymphocytic infiltration into the bronchi
    c. V /Q disturbance from pneumonia
    d. High $PaCO_2$ levels

Scenario : A 37 year old male is admitted to your unit following a motor vehicle accident. During the initial 24hrs he was hypotensive and developed acute renal failure. His current laboratory data reveal the following information :

Serum		**Urine**
Na^+	126mEq/L	59mEq/L
K^+	3.9mEq/L	
Osmolality	290mosm	485mosm
Creatinine	3.0mEq/L	

9. Based on the preceding information, which condition is likely to be present?
    a. Dehydration
    b. Fluid overload
    c. Acute renal failure
    d. Glomerulonephritis

10. Which laboratory data are abnormal?
    a. Serum creatinine
    b. Urinary osmolality
    c. Serum osmolality
    d. Urinary Na^+

11. What is the primary action of aldosterone?
    a. Inhibits sodium excretion
    b. Promotes sodium excretion
    c. Blocks water reabsorption
    d. Stimulates vasoconstriction.

12. Which substance has the most significant effect on sodium regulation?
    a. Renin level
    b. Aldosterone level
    c. Glomerular filtration rate
    d. Serum pH.

Scenario : As you are orienting a preceptor, she asks you about the treatment your patient is receiving for an infection. She tells you she remembers being taught that aminoglycosides (your patient is receiving gentamycin) can cause renal failure. Your patient has a normal urine output of 2100ml/day and the following laboratory values:

Na^+	142mEq/L
K^+	4.6mEq/L
Cl^-	103 mEq/ L
HCO_3^-	21mEq/L
Creatinine	3.2mg/dl
BUN	54
Osmolality	278mosm
Urinary Na^+	49mEq/L

She asks if this patient is at any risk for developing renal failure.

13. Based on the preceding information, what would you answer?
    a. As long as the urine output is 30ml/hr, she is not in danger of renal failure
    b. As long as her creatinine level is no greater than 2.5mg/dl, she is not at risk for acute renal failure.
    c. Based on the above information she already has acute renal failure.
    d. Although she may be at risk for renal failure , a renal ultrasound scan would be required to make a definitive diagnosis.

14. Which of the following are consistent with the diagnosis of sepsis?
    a. SVO_2 of 0.81 and a cardiac index of 6.0
    b. SVO_2 of 0.81 and a PCWP of 5
    c. Cardiac index of 6.0 and a PCWP of 5
    d. All the above

15. Which of the following are the two most common sources of infection in the critically ill population?
    a. Urinary tract infection and respiratory system infection
    b. Urinary tract infection and central nervous system infection
    c. Respiratory system infection and central nervous system infection
    d. They are all equal in the incidence of infections.

Scenario: A 22 year old male is admitted to your unit following an electrical burn. An entrance wound is found on his left hand and exit wound is noted on his right foot. He has two 16gauge IV's in place and is receiving Ringer's lactate at 300ml/hr. you notice that the output is 50ml for the past hour and is becoming red in colour. You notify a physician who suspects myoglobinuria.

16. Which of the following treatments would be expected based on this diagnosis?
    a. Increase IV fluids until urine output is 75 -100ml/hr
    b. Alkalinization of urine by adding sodium bicarbonate to IV fluids
    c. Administration of mannitol
    d. All of the above.

17. Which of the following is necessary immediate assessment for a C3-4 injury?
    a. Heart rate
    b. Motor ability
    c. Temperature
    d. Ventilation

18. Which vital sign changes (due to loss of sympathetic nervous stimulation) would occur after a spinal cord lesion above T-5?
    a. Bradycardia and hypotension
    b. Hyperthermia and tachycardia

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      c. Tachycardia and hypotension
      d. Hypertension and bradycardia

Scenario: A 79 year old female is in the intensive care unit following a head injury from a fall down a series of steps. Currently she is unresponsive, opens her eyes with painful stimuli, withdraws to pain in a decerebrate manner, and makes groaning noises when she is given a painful stimulus. You notice that the left pupil is larger than the right, whereas previous examinations noted pupillary equality.

19. Based on the above information, what is the Glasgow Coma scale for this patient?
      a. 3
      b. 6
      c. 9
      d. 15

20. What does the change in pupillary size potentially indicate?
      a. A decrease in cerebral perfusion pressure
      b. Loss of upper motor neuron function
      c. Loss of cerebellar function
      d. Increased intracranial pressure (ICP)

21. Treatment for this condition could include which of the following measures?
      a. Cervical support
      b. Spinal tap to relieve increased intracranial pressure
      c. Mechanical ventilation to augment mean arterial pressure (MAP)
      d. Osmotic diuretics and hyperventilation

Scenario: A 53 year old male is admitted to your unit with the diagnosis of cirrhosis. He is currently confused and disoriented. He has a flapping movement of hands and has jaundiced skin. Laboratory values are as follows:

SGOT	100
SGPT	88
Lactate dehydrogenase	250
Alkaline phosphate	165

22. Based on the above information, which condition is likely to be developing and causing behavioural changes?
      a. Acute renal failure
      b. Loss of cerebral perfusion pressure
      c. Loss of cerebral glucose from hepatic failure
      d. Hepatic encephalopathy

23. Which treatment would be utilized in the management of this patient?
      a. Lactose

b. High protein diet
c. Glucose bolus
d. Vitamin D and B administration

Scenario : A 69 year old female is admitted to your unit complaining of excruciating peri-umbilical pain. Her abdomen is not tender although she does not exhibit rebound tenderness. All laboratory values are normal. Vital signs are : blood pressure 168/92mmHg, pulse 113b/min and respiratory rate 28breaths/min.

24. Based on the above information, which condition is most likely to be developing?
    a. Superior mesenteric arterial obstruction
    b. Cholecystitis
    c. Pancreatitis
    d. Bowel obstruction.

25. Which treatment, aside from pain relief, would be indicated for this patient?
    a. Placement on an NPO (nothing by mouth)regimen with gastrointestinal suction
    b. Endoscopy with cauterization
    c. Laparotomy with possible mesenteric embolectomy
    d. Cholecystectomy

TOTAL MARKS   [25]

QUESTION 2

A. Discuss seven categories of consciousness	(10 marks)
B. Discuss the collaborative management of a patient with stroke	(10 marks)
C. Describe how you will promote cerebral perfusion.	(5 marks)

TOTAL MARKS   [25]

QUESTION 3

3.1 What are the four agents used in the treatment of shock?   (10 marks)

3.2 Formulate a nursing care plan for a patient with renal dysfunction, using the nursing diagnosis '**excess fluid volume related to renal dysfunction**' under the following headings.

i. Defining characteristics   (5marks)
ii. Outcome criteria   (4 marks)
iii. Nursing intervention   (6 marks)

TOTAL MARKS   [25]