

**UNIVERSITY OF SWAZILAND  
FACULTY OF HEALTH SCIENCES  
GENERAL NURSING DEPARTMENT**

**FINAL EXAMINATION PAPER FOR MAY 2005**

**COURSE TITLE:                   ADVANCED MEDICAL-SURGICAL  
NURSING SCIENCE II**

**COURSE CODE:                NUR 500**

**MARKS ALLOCATED:    100**

**TIME ALLOCATED: 3 HOURS**

**INSTRUCTIONS:**

1.    QUESTION ONE IS A MULTIPLE CHOICE EG. 1=A
2.    READ QUESTIONS CAREFULLY
3.    ANSWER ALL QUESTIONS, EACH QUESTION CONSISTS OF 25  
      MARKS
4.    A FACT EQUALS ½ A MARK FOR QUESTIONS WHICH ARE  
      NOT MULTIPLE CHOICE.
5.    WRITE CLEARLY

## QUESTION 1

A 69 year old female is admitted at 7am with persistent right-sided chest that is not affected by respiration or position. She had a V/A scan at 9aM, that showed intermediate probability for a pulmonary embolism. The pain fluctuates and is now not severe. She has crackles in her right middle lobe. Her ECG shows no signs of ischemia. She is not intubated, but is on a 35% high humidity face mask. She has the following vital signs and ABG's:

Blood pressure	94/56
Pulse	108 (sinus tachycardia)
Respiratory rate	26
SP <sub>O</sub> <sub>2</sub>	98
Temperature	36.7
pH	7.26
PaO <sub>2</sub>	98
PaCO <sub>2</sub>	30
HCO <sub>3</sub>	18
Lactate	4.8

- (1) Based on the above information, interpret the ABG's
  - a. Respiratory alkalosis with a compensating metabolic acidosis
  - b. Metabolic acidosis with a compensating respiratory alkalosis
  - c. Uncompensated respiratory alkalosis
  - d. Uncompensated metabolic acidosis
  
- (2) Based on the above information what is your interpretation of her oxygenation status ?
  - a. She shows signs of poor tissue oxygenation based on the elevated lactate or low HCO<sub>3</sub> and pH.
  - b. Her oxygenation is presently adequate based on normal SP<sub>O</sub><sub>2</sub> and PaO<sub>2</sub>
  - c. Her oxygenation is inadequate based on the F<sub>I</sub>O<sub>2</sub> of 0.35 only generating a PaO<sub>2</sub> of 98 and SP<sub>O</sub><sub>2</sub> of 0.98.
  - d. Presently her oxygenation is adequate based on the F<sub>I</sub>O<sub>2</sub> of 0.35 only generating a PaO<sub>2</sub> of 98 and SpO<sub>2</sub> of 0.98.
  
3. What intervention should you take at this time ?
  - (a) Do not notify the physician but increase the F<sub>I</sub>O<sub>2</sub> per standing orders
  - (b) Notify the physician because of significantly abnormal values
  - (c) Wait until the physician calls because some values are normal, they are not significantly abnormal
  
4. From which structure does hypoxemic drive to breath originate ?

- (a) Aortic and carotid arteries
  - (b) Pons
  - (c) Medulla
  - (d) Basal ganglia
5. An antidiuretic hormone release is inhibited by which of the following ?
- (a) Increased Serum osmolality
  - (b) Decreased serum osmolality
  - (c) Increased sodium
  - (d) Increased potassium level
6. 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 urine output is nearly 2 000mls in 8 hours with an intake of 950mls. Blood pressure is 140/74, pulse 84, respirations 22. The following laboratory data are available.

Serum	Urine
Na <sup>+</sup> 155	Na <sup>+</sup> 14
K <sup>+</sup> 3.7	Osmolality 312
Cl <sup>-</sup> 114	Specific gravity 1.005
HCO <sub>3</sub> <sup>-</sup> 23	

Based on the above information, which condition is likely to be developing?

- (a) SIADH (syndrome of inappropriate antidiuretic hormone secretion)
  - (b) Adult onset diabetes mellitus
  - (c) Anterior pituitary stimulation
  - (d) Diabetes insipidus
7. Which treatment is expected to be given to this patient ?
- (a) Desmopressin acetate (DDAVP 1- desamino - 8-D- arginine)
  - (b) D<sub>5</sub> -win 200mls/hr fluid bolus
  - (c) Diuretics
  - (d) Fluid restriction
8. A patient is admitted to the intensive care unit with a diagnosis of SIADH. Which Laboratory data would be expected if this diagnosis is correct
- (a) Hyponatremia
  - (b) Hypernatremia
  - (c) Increased serum osmolality
  - (d) Hyperkalemia
9. Which of the following is not associated as a precipitating factor with toxic crisis ?

- (a) Diabetic ketoacidosis
  - (b) Trauma
  - (c) Increased intracranial pressure
  - (d) Infection
10. The Human immunodeficiency virus (HIV) works through inhibition of which aspect of the immune system ?
- (a) B-cell lymphocytes
  - (b) T-cell lymphocytes
  - (c) Neutrophils
  - (d) Complement
11. In a patient with pneumococcal pneumonia, which of the following classes of antibiotics may be useful in treatment ?
- (a) Penicillins and cephalosporins
  - (b) Aminoglycosides
  - (c) Cephalosporins and cyclosporine
  - (d) Amphotericin B
12. Which of the following agents is used to treat pneumonitis carinii pneumonia ?
- (a) Septra (Bactrim)
  - (b) Acyclovir
  - (c) Amphotericin B
  - (d) Vancomycin
13. A 69 year old male is admitted to the Unit with the diagnosis of acute inferior wall myocardial infarction. He has a history of peripheral vascular disease and chronic obstructive pulmonary disease. During your shift he begins to complain of shortness of breath. His 12-lead ECG shows ST-Segment depression in leads V1-V4. He has dependent crackles in his posterior lobes along the expiratory wheezing. His pulse oximeter is reading 0.95 on 2L/min per nasal cannula. He has the following laboratory data.

PH	7.37
PaCO <sub>2</sub>	52
PaO <sub>2</sub>	69
HCO <sub>3</sub>	33
CPK	33
CPK-MB	4
Troponin	0.5

He has also an S(gallop) and a ll/Vl systolic murmur. The following hemodynamic

information is available.

Blood pressure	124/60
Pulse	114
Cardiac Index	2.0
Cardiac Output	4.4
Arterial pressure	40/24
PCWP	22
CVP	11

Based on the above information, what is likely happening

- (a) Exacerbation of COPD
- (b) Development of congestive heart failure
- (c) Development of inferior MI
- (d) Development of pericardial tamponade

14. Based on the above information, what would be the best treatment to improve the symptoms ?

- (a) Oxygen therapy
- (b) Dopamine
- (c) Nicardipine
- (d) Dobutamine

15. A 71 year old male is admitted with shortness of breath, orthpnoea, and progressive reduction in exercise tolerance. He states that he has "not ever been to see a doctor". His lung sounds demonstrates crackles in most of his posterior lobes. A pulse oximeter indicates a value of 0.89. A pulmonary artery is placed to help identify the origin of the shortness of breath. The following pressure is available:

Blood pressure	118/70
Pulse	110
Respiratory rate	28
Temperature	37.1
Cardiac index	2-2
Stroke index	20
Antenal Pressure	36/22
PCWP	20
CVP	6

Based on the above information, what condition is likely to be developing ?

- (a) Noncardiogenic pulmonary edema
- (b) Primary pulmonary hypertension
- (c) Sepsis
- (d) Left ventricular failure

16. What therapy would most likely improve his symptoms ?

- (a) Oxygen therapy
- (b) Phenylephrine
- (c) Furosemide
- (d) Gentamycin

17. A 37 year-old male is in your Unit following a motor vehicle accident. During his initial 24hours, he was hypotensive and developed acute renal failure. His current laboratory data reveal the following information:

	Serum	Urine
NA <sup>+</sup>	126mEq/L	59mEq/L
k <sup>+</sup>	3.9mEq/L	
Osmolality	290 MOSM	485MOSM
Creatinine	3.0MEq/L	

Based on the above information, which condition is likely to be present ?

- (a) Dehydration
  - (b) Fluid overload
  - (c) Acute renal failure
  - (d) Glomerulonephritis
18. Which laboratory data are abnormal ?
- (a) Serum creatinine
  - (b) Urinary osmolality
  - (c) Serum Osmolality
  - (d) Urinary Na<sup>+</sup>
19. Hypokalemia is associated with which acid-base disturbance ?
- (a) Metabolic acidosis
  - (b) Metabolic alkalosis
  - (c) Respiratory acidosis
  - (d) Systemic acidosis
20. A 19 year-old female is admitted to your Unit after an argument with her parents. Her parents state that they found her in her room with an empty bottle of Tylenol on her night stand. Which of the following is the initial treatment for an overdose of acetaminophen ?
- (a) Ipecac
  - (b) Lavage and N-acetylcystine
  - (c) Dialysis
  - (d) Charcoal only

21. Which of these are considered symptoms of aspirin poisoning ?
- (a) Initial pH > 7.45 and gastrointestinal bleeding
  - (b) Tachypnoea
  - (c) Gastro intestinal bleeding and late pH < 7.35
  - (d) All of the above.
22. A 45 year old male is admitted to your Unit with a diagnosis of intracranial hypertension due to subarachnoid hemorrhage. The current vital signs include blood pressure of 180/90, ICP (intracranial pressure of 15, pulse 140, respiratory rate 20.

Based on the above information, what is the cerebral perfusion pressure.

- (a) 90
  - (b) 105
  - (c) 120
  - (d) It cannot be calculated
23. A 79 year-old female is in the Intensive Care Unit following a head injury. 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.

Based on the above information, what is the Glasgow Coma Score ?

- (a) 3
  - (b) 6
  - (c) 9
  - (d) 15
24. A 59 year old female was admitted to your Unit with the diagnosis of Sepsis, accompanied by temperature of 39<sup>0</sup>c. She developed severe shortness of breath and anxiety. Her respiratory rate is 40 breaths/min and her breathing is laboured. Lung sounds are present bilaterally with widespread crackles and scattered wheezes- chest X-ray indicates generalised opacity. Analysis of blood gases indicates the following:

pH	7.46
PaCO <sub>2</sub>	30
PaO <sub>2</sub>	49
FIO <sub>2</sub>	0.60 via face mask

Based on the above information, which condition is likely to be developing ?

- (a) Severe pneumonia
  - (b) ARDS (adult respiratory distress syndrome)
  - (c) Generalised atelectasis
  - (d) Cardiogenic pulmonary edema
25. Which of the following treatments would be most appropriate to treat the pulmonary disturbance ?
- (a) Increase oxygen therapy
  - (b) Sedation and diuretics
  - (c) PEEP (Positive End Expiratory Pressure)
  - (d) Bronchodilators

### QUESTION 2

Discuss the Nursing Management of acute pain related to transmission and perception of cutaneous, visceral, muscular or ischemia impulses. Under the following headings:

- |                           |            |
|---------------------------|------------|
| (1) Subjective data       | [1 mark]   |
| (2) Objective data        | [4 marks]  |
| (3) Nursing interventions | [10 marks] |
| (4) Rationale             | [5 marks]  |
| (5) Outcome criteria      | [5 marks]  |

**TOTAL MARKS 25**

### QUESTION 3

- (a) Define hypertensive crisis and mention its causes [5 marks]
- (b) Name the drugs that are prescribed to treat hypertensive crisis using the following headings:
- |                 |            |
|-----------------|------------|
| (1) Most common | [ 4 marks] |
| (2) Less common | [ 2 marks] |
| (3) Chronic     | [ 6 marks] |
- (c) Formulate the nursing care plan for a patient with hypertensive crisis. Use the following diagnosis:
- knowledge deficit on discharge regimen related to lack of previous exposure to information.
- Use the heading:
- |                       |             |
|-----------------------|-------------|
| Nursing interventions | [ 8 marks ] |
|-----------------------|-------------|

**TOTAL 25 MARKS**



#### QUESTION 4

(a) Discuss the frequently used nursing interventions in critical care [ 10 marks ]

(b) Discuss the nursing management of high risk patients such as in systemic inflammatory response syndrome and multiple organ dysfunction (SIRS/MODS.) Using the following nursing diagnosis.

High risk for infection, using the following headings

(1) Nursing interventions

[ 9 marks ]

(2) Rationale

[ 6 marks ]

**TOTAL 25 MARKS**