UNIVERSITY OF SWAZILAND

FACULTY OF HEALTH SCIENCES

FINAL EXAMINATION

MAY 2006

COURSE CODE : NUR 500

COURSE NAME : ADVANCED MEDICAL-SURGICAL NURSING

TIME ALLOWED : 3 Hrs

MARKS ALLOCATED : 100

INSTRUCTIONS

1. **Answer all questions.**
2. **Read questions carefully**
3. **Question 1 is multiple choice type, you give the best answer e.g 1 – a**
4. **Each correct fact is worth ½ mark unless indicated otherwise**
5. **Write clearly**

QUESTION 1

SCENARIO: A 74 year old male is admitted to your unit with a diagnosis of respiratory failure secondary to pneumonia. He is currently intubated and on assisted mandatory ventilation (AMV) with a tidal volume (Vt) of 750cc, ventilator respiratory rate of 10, total rate of 29b/m. His blood gas values are as follows:

pH	**7.48**
$PaCO_2$	**30mmHg**
PaO_2	**64mmHg**
$FI0_2$	**80%**

1. Based on the above information, which type of respiratory failure exists?
   a. Oxygenation failure
   b. Ventilation failure
   c. Combined oxygenation and ventilation failure
   d. Neither oxygenation nor ventilation failure

2. Which treatment would be indicated based upon the blood gas values given?
   a. Increase the ventilation Vt
   b. Decrease the ventilator rate
   c. Add positive –end-expiratory -pressure (PEEP) therapy to reduce $FI0_2$
   d. Reduce the $FI0_2$ increasing the ventilator peak flow rate

3. Which system gives more stable $FI0_2$ therapy?
   a. Simple face mask
   b. Nasal cannula
   c. Rebreathing mask
   d. Venture mask

4. The physician is attempting to intubate the patient but is uncertain if the endotracheal tube is in the lungs. What would you do to help the physician?
   a. Call for a chest X-ray film and keep bagging the patient
   b. Attach a carbon dioxide monitor to confirm tube placement
   c. Call someone from anaesthesia to come and intubate
   d. Suggest he/she pull the tube and start over

SCENARIO: a 35 year old female is admitted with respiratory failure secondary to viral pnemonitis. She is currently on assisted mandatory ventilation (AMV) with ventilator rate of 12, total of 26; VT of 800, $FI0_2$ of 80% and peak airway pressure of 38. Finger oximetry (SpO_2) decreases to 0.83. Breath sounds are diminished on the right lung with peak airway pressure of 52cmH_2O.

5. Based on the above information which condition is likely to develop?
   a. Acute respiratory distress syndrome (ARDS)
   b. Pneumonia
   c. Pneumothorax
   d. Pericardial tamponade

6. Treatment would most likely include which of the following measures?
   a. Administration of morphine and furosemide (lasix)
   b. Addition of 5cm PEEP (positive-end-expiratory-pressure)
   c. Administration of dobutamine
   d. Insertion of a chest tube

SCENARIO: A 63 year old male is admitted with acute respiratory distress. Symptoms include marked shortness of breath and circumoral cyanosis. He is awake but is beginning to be less responsive. He has a history of chronic obstructive pulmonary disease (COPD). Blood gases reveal the following information:

pH	**7.22**
$PaCO_2$	**62mmHg**
PaO_2	**54mmHg**
SaO_2	**0.81**
HCO^-_3	**25mEq/L**
FIO_2	**30%**

7. Based on the preceding information, which condition is likely to be developing?
   a. Congestive heart failure (CHF)
   b. Acute respiratory distress syndrome (ARDS)
   c. Acute respiratory failure (ARF)
   d. Pulmonary embolism (PE)

8. What would be the first treatment indicated at this time?
   a. Increase FIO_2
   b. Intubate and place on mechanical ventilation
   c. Postural drainage treatment
   d. Aminophylline aerosol treatment

SCENARIO:A 70 year old male is admitted in your unit with a diagnosis of exarcebation of chronic obstructive pulmonary disease (COPD), probably a pneumonia induced event. He has very thick secretions which have been difficult to remove during endotracheal suctioning.

9. Based on the above information which of the following is the best method of aiding the removal of the thick secretions.
    a. Instillation of normal saline
    b. Increasing the suction pressure
    c. Stimulation of his cough reflex
    d. Increasing the humidity of his oxygen

10. Failure to remove secretions will produce which effect on the blood gases?
    a. Decrease in $PaCO_2$
    b. Decrease in PaO_2
    c. Increase in pH
    d. Increase in HCO^-_3 levels

11. Which of the following conditions produce both ventilation and perfusion disturbances?
    a. Emphysema
    b. Asthma
    c. Superior vena caval syndrome
    d. Chronic bronchitis or COPD

SCENARIO: A 65 yr old male is admitted to your ward with chest pain . The pain started at home. The pain went away for a while when he rested but then returned. Currently he has substernal chest pain radiating to the left arm and chin. The pain is the same regardless of the position. Vital signs are as follows: Blood pressure 132/86mmHg, pulse 96bpm, respirations 25 breaths/min. His 12 lead ECG shows depressed ST segments in the inferior vena cava leads. Small Q waves, less than 1/3 , the height of the R wave, are present in the inferior leads.

12. Based on the preceding information, which condition is likely to be developing?
    a. Angina
    b. Acute myocardial infarction
    c. Pericarditis
    d. Pericardial tamponade

13. What would be the most likely treatment for this condition?
    a. Nitrates and beta blockers
    b. Thrombolytic therapy
    c. Pericardiocentesis
    d. Aspirin and analgesics

SCENARIO: A 72 yr old is admitted in your ward with the diagnosis of anterior myocardial infarction (MI). During your shift you note that the patient has developed a 2:1 heart block and a constant PR interval, with a ventricular response rate of 42. His BP is 84/50mmHg

14. Based on the above information, and considering the type of MI, which type of heart block is likely ?
    a. First degree
    b. Second degree Type I
    c. Second degree Type II
    d. Third degree

15. Which treatment is likely to be most effective in stabilizing this rhythm?
    a. Pacemaker
    b. Calcium chloride
    c. Dopamine
    d. Epinephrine

16. Thrombolytic therapy is commonly associated with complications. Which of the following is NOT a complication of thrombolytic therapy?
    a. Bradycardias
    b. Bleeding from the venipuncture site
    c. Ventricular ectopy
    d. Extension of the MI due to embolic phenomena

17. Which of the following is an indication for angioplasty?
    a. Proximal stenosis of a coronary artery
    b. Distal stenosis of a coronary artery
    c. Multiple obstructions in the coronary arteries
    d. No prior episodes of angina

SCENARIO: A 67 yr old male is admitted in your unit with e decreased level of consciousness. He was brought to the hospital by police after being found in a shopping mall 'acting strange'. He complains of fatigue but is generally disoriented as to time and place. His respiratory rate is deep and rapid. Vital signs and laboratory data are as follows:

BP	**96/58**		
Pulse	**114b/m**		
Respiration	**34 breaths /min**		
Glucose	**42mmol/l**		
Osmolality	**307m.osm/kg**		
PaO_2	**91mmHg ;**	**$PaCO_2$**	**20mmHg**
pH	**7.28**	**Na^+**	**156mEq/L**
K^+	**5.0mEq/L**	**HCO^-_3**	**14mEq/L**

The blood pressure decreases when the patient changes from a lying to a sitting position.

18. Based on the above information, which condition is likely to be developing?
    a. Adrenal crisis
    b. Thyroid storm
    c. HHNK (Hyperosmolar, hyperglycemic, non-ketotic) coma
    d. Diabetic keto-acidosis (DKA)

19. Which of the following would most likely be administered to this patient?
    a. Glucocorticoids
    b. Thyroxine
    c. Sodium bicarbonate
    d. Insulin and normal saline

SCENARIO: A 41 yr old female is admitted to your unit with an exacerbation of chronic lymphocytic leukaemia. She states that she has had small amounts of vaginal bleeding. Ecchymotic areas are noted on her arms and legs. Laboratory data reveal the following:

Platelets	**15,000/mm^3**
White blood cells	**4,000/mm^3**
Granulocytes	**50%**

20. Which of the following nursing measures should be employed on the above patient?
    a. Place on bleeding precautions
    b. Place on reverse isolation and bleeding precautions
    c. Avoid fresh plants and vegetables in the room and place on reverse isolation
    d. Place on reverse isolation

21. Which treatment would be ordered for this patient?
    a. Platelets infusion
    b. Initiation of aerosolized pentamidine
    c. A low dose of heparin therapy
    d. Amphotericin B

22. A patient is admitted to the intensive care unit with signs and symptoms of ascending paralysis and respiratory failure. The critical care nurse would investigate for a past history of :
    a. Trauma of the spinal cord
    b. Trauma to the head
    c. Post –viral respiratory or gastrointestinal infection
    d. Aspiration

23. Which of the following organisms are the most common cause of bacterial meningitis in adults?
    a. Meningococcus
    b. Haemophilus influenza
    c. Staphylococcus
    d. Pneumococcus

24. A 20 yr old male is admitted to your ward following a suicide attempt after breaking up with his girlfriend. He ingested an unknown substance and is currently combative but with a reduced level of consciousness. A large bore nasogastric tube has been inserted in an attempt to lavage the stomach. Which of the following nursing actions should be initiated at this point?
    a. Protection against aspiration
    b. Intubation and mechanical ventilation
    c. Sedation to reduce combativeness
    d. All of the above

25. Oesophageal varices are the result of increase in which of the following vascular parameters?
    a. Hepatic arterial pressure
    b. Hepatic venous pressure
    c. Portal venous pressure
    d. Superior iliac arterial pressure

QUESTION 2

A. Discuss what you can do as a critical care nurse to support decision making by a patient who is going to undergo open heart surgery (7)

B. Name and describe ethical principles in critical care. (8)

C. Discuss strategies to inspire hope in families of critically ill patients. (10)

[25marks]

QUESTION 3

A Discuss how you could identify acid-base disturbances by analyzing arterial blood gas values (ABG) using the important values. (10)

B. Formulate a nursing care plan for a patient with acute respiratory failure induced by oxygenation disturbances. Use the following nursing diagnosis: **Impaired gas exchange** . Utilize the following headings

i. Nursing interventions (10)

ii. Patient outcomes (5)

[25 marks]

QUESTION 4

A) Describe peritoneal dialysis (7)

B) Describe indications and contraindications of peritoneal dialysis (7)

C) Name four complications of peritoneal dialysis and discuss their nursing management (11)

[25 marks]