AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES
HIGHER DIPLOMA IN CRITICAL CARE NURSING

END OF SEMESTER MAY/AUGUST 2023 EXAMINATIONS

COURSE UNIT: ACN 120 ESSENTIALS OF CRITICAL CARE NURSING

DATE: 3RD AUGUST 2023

TIME: 2 HOURS

START: 11:15 A.M **END: 1:15 P.M**

Instructions:

1. This paper has 2 sections: I and II
2. Answer ALL questions
3. Use the University examination booklets provided
4. Do not write on the question paper

SECTION I: MULTIPLE CHOICE QUESTIONS (50 MARKS)

1. The following is true about vital capacity;
   A. Vital capacity is increased in emphysema and reduced in interstitial fibrosis
   B. Vital capacity is the maximum amount of air which can be exhaled after maximal inspiration
   C. Vital capacity is the sum of tidal volume and inspiratory capacity
   D. Reduced vital capacity is a specific indication of restrictive lung disease
2. Well-functioning chest tube drainage system should have;
   A. No fluctuation of water in the water seal chamber
   B. Drainage system maintained above the patient's chest
   C. Continuous bubbling in water chamber
   D. Fluctuation of water in water seal chamber during inhalation and exhalation
3. The term barotrauma refers to injury caused by;
   A. Oxygen
   B. Friction
   C. Temperature
   D. Pressure
4. Metabolic acidosis results in;
   A. Increased PaCO2
   B. Decreased PH
   C. Increased base excess
   D. Increased HCO3
5. Interpret the following blood gas; PaO2 78; PaCO2 29; PH 7.29; HCO3 14; BE-10
   A. Respiratory acidosis
   B. Respiratory alkalosis
   C. Metabolic acidosis
   D. Metabolic alkalosis
6. During endotracheal suction, the point of resistance encountered upon inserting suction tube is the:-
   A. Carina
   B. Hilum
   C. Bronchi
   D. Alveolar
7. Chest X-ray findings in a patient with COPD include
   A. Flattening of the diaphragm
   B. Elevated hemi-diaphragm
   C. Diminished radiolucency
   D. Blunting of costophrenic angles
8. The following is a common technique used in chest examination to assess the resonance of lung sounds;
   A. Percussion
   B. Auscultation
   C. Palpation
   D. Inspection

9. The following is the primary buffer system in the body that helps maintain acid-base balance;
    A. Renal system
    B. Respiratory system
    C. Digestive system
    D. Renin -angiotensin system
10. The following oxygen delivery devices provides the highest concentration of oxygen;
    A. Nasal canula
    B. Simple face mask
    C. Venturi mask
    D. Non- rebreather mask
11. The FOUR Score is a neurological assessment tool that evaluates which of the following areas?
    A. Eye response, motor response, and verbal response
    B. Eye response, motor response, brainstem reflexes, and respiratory pattern
    C. Motor response, brainstem reflexes, and respiratory pattern
    D. Motor response, brainstem reflexes, and cranial nerve function
12. The purpose of using the Glasgow Coma Scale (GCS) in neurological assessment is;
    A. To evaluate cognitive function
    B. To assess muscle strength
    C. To measure pain intensity
    D. To determine the level of consciousness
13. A diagnostic tool that records electrical activity in the brain is
    A. Electrocardiogram (ECG)
    B. Electroencephalogram (EEG)
    C. Electromyography (EMG)
    D. Nerve Conduction Studies (NCS)
14. Cerebrospinal Fluid (CSF) is obtained by performing;
    A. Lumbar puncture
    B. Biopsy
    C. Endoscopy
    D. Bronchoscopy
15. The role of a ventricular drain in managing increased intracranial pressure is;
    A. Administering medications directly into the brain
    B. Monitoring blood pressure fluctuations
    C. Draining excess cerebrospinal fluid
    D. Assessing brain oxygen levels
16. An intracranial space-occupying lesion refers to:
    A. Blood clot in the brain
    B. Infection in the brain
    C. Tumor in the brain
    D. Swelling of the brain tissue

17. The type of cardiovascular accident caused by a blood clot that blocks a blood vessel in the brain is;
    A. Thrombotic Cardiovascular Accident
    B. Hemorrhagic Cardiovascular Accident
    C. Ischemic Cardiovascular Accident
    D. Embolic Cardiovascular Accident
18. Generalized Tonic-Clonic Seizures are characterized by:
    A. Sudden brief loss of consciousness
    B. Absence of convulsions
    C. Muscle rigidity followed by jerking movements
    D. Repetitive blinking or facial twitches
19. The main difference between a cerebrovascular accident (CVA) and a transient ischemic attack (TIA) is;
    A. Duration of symptoms
    B. Severity of symptoms
    C. Underlying cause
    D. Age of the patient
20. A typical pattern of progression in Guillain-Barré Syndrome is;
    A. Ascending paralysis
    B. Descending paralysis
    C. Bilateral paralysis
    D. Unilateral paralysis

21. Gastric inflation is more likely to occur if the rescuer
    A. Does not make a good seal between the face and the mask.
    B. Gives breaths too quickly or with too much force.
    C. Gives each breath over 1 second.
    D. Gives volume just sufficient to see the chest rise.
22. Complete chest recoil contributes to CPR success by
    A. Reducing the fatigue of the rescuer.
    B. Allowing the heart to refill with blood between compressions.
    C. Reducing the risk of rib fractures.
    D. Increasing the rate of chest compressions.
23. Which of the following is a characteristic of high-quality CPR in adults?
    A. Minimizing recoil
    B. Compressing at a depth of about 1 inch
    C. Compressing at a depth of at least 2 inches and not exceeding 2.4inches
    D. Checking for a pulse every minute
24. The compression-to-ventilation ratio for 2-rescuer adult CPR is
    A. 30:2.
    B. 5:1.
    C. 20:2.
    D. 15:2.
25. The proper compression rate for victims of all ages is at least
    A. 30 compressions per minute.
    B. 50 compressions per minute.
    C. 100-120 compressions per minute.
    D. 200 compressions per minute.

26. Which of the following victims needs CPR?
    A. A victim with a pulse who is having trouble breathing
    B. A victim with chest pain and indigestion
    C. A victim who is unresponsive with no normal breathing and no pulse
    D. A victim who is unresponsive but is breathing adequately

27. Ideally, interruptions in chest compressions should be

    A. Limited to less than 10 seconds.
    B. Performed as often as needed to assess the victim.
    C. Longer than 10 seconds.
    D. Performed every 5 minutes.

28. The rescuer should deliver a shock with an AED after

    A. The AED advises a shock, charges, and prompts the rescuer to push the shock button.
    B. Completion of 2 cycles of compressions and breaths.
    C. Placement of an advanced airway.
    D. A check for a carotid pulse.

29. Why is it important to compress to the appropriate depth during CPR?

    A. Adequate depth of compression is needed to create blood flow during compressions.
    B. Adequate depth of compression is needed to create air flow into the lungs and adequate oxygenation.
    C. Adequate depth of compression is needed to prolong a systole.
    D. Adequate depth of compression is needed to stimulate spontaneous respirations.

30. If a victim of foreign body airway obstruction becomes unresponsive, the rescuer should send someone to activate the emergency response system and immediately

    A. performs abdominal thrusts
    B. performs blind finger sweeps
    C. start CPR beginning with compressions
    D. calls the victim's doctor

31. For which of the following would it be appropriate to move an adult victim who needs CPR?

    A. When help is more than 15 minutes away from the scene
    B. To locate the AED when one is not available
    C. When the adult victim is in a dangerous environment
    D. As soon as the adult is found to be in arrest

32. For every delay in defibrillation the chances of survival are reduced by?

    A. 5%
    B. 10%
    C. 25%
    D. 20%

33. Which of the following ventilation devices/techniques is not recommended for a single rescuer to provide breaths during CPR?

    A. Bag-mask device
    B. Mouth-to–barrier device technique
    C. Mouth-to-mouth technique
    D. Mouth-to-mask techniques

34. Which of the following options lists the correct compression and ventilation rates for 2 rescuers CPR in the presence of an advanced airway?
    A. Compress at a rate of at least 100-120 per minute, 1 breath every 6 seconds.
    B. Compress at a rate of at least 60 per minute, 1 breath every 6 to 8 seconds.
    C. Compress at a rate of at least 100 per minute, 2 breaths every 5 to 10 seconds.
    D. Compress at a rate of at least 60 per minute, 1 breath every 5 to 10 seconds.

35. High-quality CPR includes starting compressions within how many seconds after recognition of cardiac arrest in adults?
    A. 10
    B. 15
    C. 20
    D. 30

36. The QRS complex;
    A. Should be equal or less than 3 small boxes
    B. Denotes ventricular repolarization
    C. Corresponds to the phase 4 in the cardiac action potential
    D. Should be equal to 0.20 seconds

37. Which of the following ECG intervals is affected by quinidine
    A. PR interval
    B. QT interval
    C. TP interval
    D. QRS interval

38. Supraventricular Tachycardia
    A. Should be managed by immediate defibrillation
    B. Atropine is a drug of choice
    C. It is an atrial rhythm
    D. Adrenaline quickly restores the rhythm.

39. The initial vasopressor of choice in a patient in septic shock should be;
    A. Dopamine
    B. Dobutamine
    C. Noradrenaline
    D. Adrenaline

40. The best fluid in trauma resuscitation for a patient post catastrophic bleeding is;
    A. Crystalloids
    B. Colloids
    C. Packed cells
    D. Whole blood

41. In hypertensive urgency
    A. The blood pressure is under control
    B. IV antihypertensives are preferred
    C. There is evidence of end organ damage
    D. Oral antihypertensives are sufficient.

42. Mr Kamau with crushing chest pain and severe diaphoresis has a confirmed STEMI. What will be the priority as per the ACS protocol?
    A. Take Mr kamau for a CT scan brain to rule out a stroke
    B. Take Mr Kamau to Cath lab immediately for a primary PCI
    C. Start the patient on Aspirin, Nitroglycerine, Morphine protocol
    D. Admit the patient to a cardiac ICU for close monitoring
43. The following is true about Wolf Parkinson White (WPW) syndrome;
    A. The PR interval is prolonged
    B. The QRS interval will be normal
    C. The definitive treatment is catheter ablation
    D. It is brought by enhanced automaticity.
44. In the SAN, failure of the P cells leads to,
    A. Sinus arrest
    B. Sinus arrythmia
    C. Sino atrial exit block
    D. Atrial Fibrillation
45. On the ECG strip, absence of P wave is indicative of: -
    A. Sinus arrest
    B. Sinus arrythmia
    C. Sino atrial exit block
    D. Atrial Fibrillation
46. A patient who has just gone through insertion of a permanent pacemaker should avoid;
    A. Lifting heavy objects
    B. Sexual activity
    C. Flying in Aircrafts
    D. Using Kitchen appliances
47. The following is an indication for cardioversion
    A. Pulseless ventricular Tachycardia
    B. Supraventricular Tachycardia
    C. Idioventricular rythms
    D. Asystole
48. The commonest cyanotic heart defect is
    A. Ventricular septal defect
    B. Atrial septal defect
    C. Tetralogy of Fallot
    D. Coarctation of the aorta
49. The two solutions used to achieve cardioplegia during open heart surgeries are
    A. Potassium chloride and magnesium sulphate
    B. Potassium sulphate and magnesium chloride
    C. Protamine sulfate and magnesium sulphate
    D. Potassium chloride and magnesium chloride.
50. The vulnerable period during the cardiac cycle is: -
    A. At the peak of the R wave
    B. At the peak of the P wave
    C. From the pick of the R wave to the mid T wave
    D. From mid T wave to the end of the T wave

SECTION II: SHORT ANSWER QUESTIONS (20 MARKS)

1. State five (5) types of defibrillators (5 marks)
2. State five (5) qualities of a good team dynamic during CPR (5 marks)
3. State five (5) rehabilitative interventions for a patient with stroke (5 marks)
4. State five (5) nursing interventions of a patient with an External ventricular drain (5 marks)