



AMREF INTERNATIONAL UNIVERSITY
UNIVERSITY EXAMINATIONS: 2023/2024 ACADEMIC YEAR

FIRST YEAR TRIMESTER ONE

HIGHER DIPLOMA IN CRITICAL CARE NURSING

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF NURSING & MIDWIFERY SCIENCES

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

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