



**AMREF INTERNATIONAL UNIVERSITY**

**SCHOOL OF HEALTH SCIENCES**

**DEPARTMENT OF NURSING AND MIDWIFERY**

**HIGHER DIPLOMA IN KENYA REGISTERED CRITICAL CARE NURSING**

**ACN129: Complementary concepts in Critical Care Nursing**

**Date: 9<sup>th</sup> December 2022.**

**Time: 2 hours**

**Start:9.00AM Stop:11.00AM**

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**Instructions**

- 1) This paper comprises multiple Choice Questions (MCQs)
- 2) Answer **ALL** questions.
- 3) Use the University examination booklets provided
- 4) Re-writing the questions on your answer sheet is unnecessary

**SECTION A: MULTIPLE CHOICE QUESTIONS (70 MARKS)**

1. Full atropinization includes the following;
  - a) Salivation
  - b) Mydriasis
  - c) Emesis
  - d) Gastric motility
  
2. The diagnostic criteria for SIADH (Syndrome of inappropriate antidiuretic hormone) is;
  - a) Hyponatremia, increased plasma osmolality
  - b) Hyponatremia, decreased urine osmolality
  - c) Increased urine osmolality, decreased plasma osmolality
  - d) Increased urine osmolality, increased plasma osmolality
  
3. Using the rule of nines, calculate the total burn surface area for a patient with burns to the entire anterior chest and abdomen;
  - a) 9%
  - b) 18%
  - c) 36%
  - d) 45%
  
4. Pancreatic islets of Langerhans cells that produce glucagon are;
  - a) Beta
  - b) Alpha
  - c) Delta
  - d) Gamma
  
5. Acid base imbalance associated with diabetic ketoacidosis is;
  - a) Metabolic alkalosis
  - b) Respiratory acidosis
  - c) Metabolic acidosis
  - d) Respiratory alkalosis
  
6. A complication that may follow thyroidectomy surgery is;
  - a) Ketoacidosis
  - b) Thyroid crisis
  - c) Tetany
  - d) Hypoglycemia
  
7. Addison's disease is associated with;
  - a) Hyper-secretion of aldosterone
  - b) Tumour of the adrenal gland
  - c) Hypo-secretion of the adrenal cortex
  - d) Hyper-secretion of cortisol
  
8. Neurogenic shock is characterized by;
  - a) Cold clammy skin, hypothermia, vasoconstriction, tachycardia
  - b) Poikilothermia, bradycardia, vasodilation, dry skin
  - c) Tachycardia, poikilothermia, dry skin, hypotension

- d) Bradycardia, hypothermia, hypotension, clammy skin
9. A patient in shock exhibiting anasarca, pulmonary edema and hypotension is in;
- Progressive stage
  - Initial stage
  - Irreversible stage
  - Compensatory stage
10. The most sensitive indicator of a successful response to each step in neonatal Resuscitation is;
- Rise in oxygen saturation levels
  - Improved skin color
  - Rise in heart rate
  - Improved muscle tone
11. The preferred resuscitation fluid type in acute pancreatitis is;
- Normal saline
  - Dextrose in normal saline
  - Mannitol
  - Ringer's lactate
12. Blood calcium levels are lowered by the deficiency of;
- Thyroxine
  - Calcitonin
  - Parathormone
  - Levothyroxine
13. Insulin therapy in the management of diabetic ketoacidosis causes;
- Decrease in cellular potassium
  - Increase in cellular potassium
  - Increase in serum glucose
  - Increase in serum potassium
14. Positive tests of chvostek and trousseau signs indicate;
- Hypocalcemia
  - Hypokalemia
  - Hypercalcemia
  - Hyperkalemia
15. The most appropriate nursing intervention for a patient with adrenal crisis is;
- Encourage and allow family members to visit the patient
  - Encourage ingestion of low potassium and high sodium foods
  - Withhold glucocorticoid preparation until crisis has passed
  - Encourage ingestion of high potassium and low sodium foods
16. Activated charcoal is;
- An ineffective treatment for drug overdose
  - Effective for most oral poisons following gastric emptying
  - The appropriate antidote for corrosive agents
  - Administered by enema

17. During urine formation the aldosterone hormone is responsible for;
- Increased re-absorption of sodium and excretion of potassium.
  - Increased permeability of the distal convoluted tubules and collecting tubules increasing re-absorption of water.
  - Permeability of the proximal convoluted tubule and loop of Henley in excretion of water
  - Regulation in re-absorption of calcium phosphate
18. Patients with chronic Kidney Disease are prescribed activated vitamin D;
- To bind phosphate in the gastro intestinal tract.
  - For treatment of iron deficiency anemia
  - To induce red blood cells production.
  - To suppress parathyroid hormone production
19. The mineral that requires routine supplementation in a renal patient is;
- Sodium
  - Potassium
  - Iron
  - Calcium
20. High flux dialyzers have;
- Thin membranes with numerous holes, large effective membrane surface area
  - Thick membranes with fewer holes, large effective membrane surface area
  - Thin membranes with fewer holes, small effective membrane surface area
  - Thick membranes with numerous holes, small effective membrane surface area
21. Chronic kidney disease is defined as;
- Sudden irreversible deterioration in renal functions due to permanent loss of nephrons with glomerular filtration rate of less than 90mls/min for more than 3 months
  - Sudden, potentially reversible deterioration in renal functions resulting in azotemia
  - Progressive reversible deterioration in renal functions in which the body's ability to maintain metabolic, fluid and electrolyte balance fails resulting in azotemia.
  - Progressive, irreversible decline in renal functions due to permanent loss of nephrons with glomerular filtration rate of less than 60mls/min for more than 3 months
22. The permeability of a dialyzer membrane to water depends on:
- Type of dialyzer, potting materials used on dialyzer
  - Membrane thickness, mode of sterilization
  - Membrane thickness, dialyzer membrane pore size
  - Molecular weight of substances, ultrafiltration volume
23. Dialysate is:
- The fluid that circulates within the fibers of the dialyzer
  - A mixture of treated water and major electrolytes
  - The fluid that creates a concentration gradient to impede diffusion rate
  - Warmed to body temperature to increase the blood flow through the dialyzer

24. The measure of the number of dissolved particles per unit of water in the urine is referred to as:
- Specific gravity
  - Osmolarity
  - PH
  - Trace elements
25. The most reliable diagnostic urine sample is:
- First morning specimen
  - Random specimen
  - Mid-stream specimen
  - Timed collection specimen
26. The most accurate kidney function test is:
- Urea
  - Creatinine
  - Serum potassium ( $K^+$ )
  - Serum sodium ( $Na^+$ )
27. Ultrafiltration:
- Is proportional to the temperature of a dialysis solution
  - Is the movement of fluid together with the low molecular weight solutes
  - Is accomplished by applying positive pressure to the dialysis membranes
  - Occurs when solutes driven by osmotic pressure are pushed through semi-permeable membrane
28. The three main anticoagulation techniques used in hemodialysis are:
- Use of heparin free techniques, high blood flow rate, regional citrate anticoagulation
  - Periodic saline rinse, routine heparin, high blood flow rates.
  - Heparin rinse, high blood flow rates, regional citrate anticoagulation
  - Use of heparin free techniques, use of heparin ,regional citrate anticoagulation
29. Arterio-venous fistula for hemodialysis:
- Requires 8-12 weeks maturation time before it can be used.
  - Can be used immediately after creation for emergency dialysis
  - Is an ideal vascular access for all the dialyzing patients
  - Is a subcutaneous anastomosis between an artery and vein using a tube
30. High conductivity alarm is likely to occur if the hemodialysis machine is conducting:
- Pure treated water that has not mixed with dialysate
  - Pure concentrate that has not been mixed with treated water
  - Dialysate that has been mixed with the blood
  - Bicarbonate dialysate and treated water that has been mixed in the ratio of 1:3
31. Causes of hyperkalemia include:
- Renal failure, furosemide, resonium
  - Rhabdomyolysis, renal failure, spironolactone

- c) Resonium, furosemide, renal failure
  - d) Renal failure, Rhabdomyolysis, resonium
32. The emergency management of tension pneumothorax is insertion of a large bore needle into the:
- a) 3<sup>rd</sup> intercostal space mid axillary line
  - b) 2<sup>nd</sup> intercostal space mid axillary line
  - c) 4<sup>th</sup> intercostal space mid axillary line
  - d) 6<sup>th</sup> intercostal space mid axillary line
33. Cyanide poisoning will present with:
- a) Hypoxic hypoxia
  - b) Stagnant hypoxia
  - c) Histotoxic hypoxia
  - d) Anemic hypoxia
34. Diagnostic thoracocentesis:
- a) Can be done on patients with intra-aortic balloon pump
  - b) Should not be done in patients with coagulation defects
  - c) Should not be delayed in unstable patients
  - d) Is the diagnostic procedure of choice in mechanically ventilated trauma patients
35. The appropriate action for a nurse to take after observing oscillations of underwater seal drainage set up is to:
- a) Check all connections for a leak
  - b) Continue to monitor for this normal finding
  - c) Immediately call a chest physician
  - d) Clamp the tubing until the oscillations stop
36. Hematological manifestations of kidney disease include:
- a) Low hemoglobin levels, depleted iron stores, uremic frost
  - b) Low platelet count, uremic frost, bleeding tendencies
  - c) Uremic frost, low hemoglobin levels, bleeding tendencies
  - d) Low hemoglobin levels, low platelet count, bleeding tendencies
37. The purpose of the water treatment plant in a renal unit is to
- a) Remove excess minerals, bacteria, mud
  - b) Reduce the amount of potassium to be added in the dialysis fluid
  - c) Allow for shorter duration of dialysis treatments.
  - d) Reduce the amount of buffer to be added to the dialysate
38. Indications for dialysis include:
- a) Metabolic acidosis, uremic syndrome, hypokalemia, fluid overload, hyperthermia
  - b) Metabolic acidosis, uremic syndrome, hyperkalemia, fluid overload, hypothermia
  - c) Metabolic alkalosis, uremic syndrome, hyperkalemia, fluid overload, hyperthermia
  - d) Metabolic acidosis, uremic syndrome, hypokalemia, fluid overload, hypothermia
39. The procedure of choice in management of urolithiasis is:

- a) Cystoscopy
  - b) Direct visualization Urethroscopy(DVU)
  - c) Urethroscopy
  - d) Laser Lithotripsy
40. Prevention of air embolism during hemodialysis includes:
- a) Use of solutions in collapsible bags rather than air vented bottles
  - b) Use of appropriate blood flow for type and size of access
  - c) Visual inspection of the arterial bloodline before connecting to access
  - d) Re-infusing patient with normal saline with disarmed air detector
41. Nursing roles for arterial venous fistula (AVF) may include:
- a) Advising patient to increase movements and activities with the hand
  - b) Assessing for character of the pulses
  - c) Application of mupirocin cream till wound is healed
  - d) Assess the AVF for maturation after three (3) months
42. To avoid toxic level of drugs in uremic patients:
- a) Increase the dose and lengthen the dosage intervals
  - b) Decrease the dose but maintain the normal dosage intervals
  - c) Decrease the dose and lengthen the dosage interval
  - d) Increase the dose but maintain the normal dosage intervals
43. The nurse before initiating thrombolytic therapy in a client with pulmonary embolism, the following assessment finding should be reported;
- a) Adventitious breath sounds
  - b) Temperature of (37.4 °C)
  - c) Blood pressure of 198/110 mm Hg
  - d) Respiratory rate of 28 breaths/minute
44. The following ECG changes would be observed in a patient with a blood potassium value of 2.5 mEq/L (2.5 mmol/L);
- a) Widened QRS complex
  - b) Absent P waves
  - c) Inverted T waves
  - d) Depressed ST segment
45. The following clinical manifestation would be expected in a patient with hypocalcemia;
- a) Twitching
  - b) Hypoactive bowel sounds
  - c) Negative Trousseau's sign
  - d) Hypoactive deep tendon reflexes
46. The following would be prescribed for a client with sinus bradycardia, a heartrate of 45 beats/minute, complaints of dizziness and a blood pressure of 82/60 mm Hg;
- a) Administer digoxin.
  - b) Defibrillate the client.
  - c) Continue to monitor the client.
  - d) Prepare for transcutaneous pacing

47. The following is indicative of airway obstruction in a child with epiglottitis;
- Nasal flaring and bradycardia.
  - leaning forward, with the chin thrust out
  - Low-grade fever and complains of a sore throat.
  - leaning backward, supporting himself or herself with the hands and arms
48. The following is a late sign of increased Intra Cranial Pressure (ICP);
- Nausea
  - Irritability
  - Headache
  - Bradycardia
49. The following is an immediate intervention for an unresponsive client with hyperosmolar hyperglycemic syndrome;
- Endotracheal intubation
  - 100 units of NPH (soluble) insulin
  - Intravenous infusion of normal saline
  - Intravenous infusion of sodium bicarbonate
50. The priority intervention for a client with myxedema coma is;
- Warm the client.
  - Maintain a patent airway.
  - Administer thyroid hormone.
  - Administer fluid replacement
51. The priority intervention for a patient with diabetic ketoacidosis (DKA) is;
- Correct the acidosis.
  - Administer 5% dextrose intravenously.
  - Apply a monitor for an electrocardiogram.
  - Administer short-duration insulin intravenously
52. The following is a complication of pheochromocytoma
- Urinary output of 50 mL/hour
  - Coagulation time of 5 minutes
  - Heart rate that is 90beats/minute and irregular
  - Blood urea nitrogen level of 20 mg/dL (7.1 mmol/L)
53. The following is an early sign of acute respiratory distress syndrome;
- Bilateral wheezing
  - Inspiratory crackles
  - Intercostal retractions
  - Increased respiratory rate
54. Painless hematuria is associated with the following condition;
- Pyelonephritis
  - Glomerulonephritis
  - Trauma to the bladder
  - Renal cancer



55. The priority intervention for a patient scheduled for catheterization with observed bleeding in the urethral meatus is;
- Withhold the catheterization and notify the primary physician.
  - Use a small-sized catheter and an anesthetic gel as a lubricant.
  - Administer parenteral pain medication before inserting the catheter.
  - Clean the meatus with soap and water before opening the catheterization kit.
56. The immediate action following accidental spraying of an insecticide to the eye is;
- Irrigate the eyes with water.
  - Come to the emergency department.
  - Call the health care provider (HCP).
  - Irrigate the eyes with diluted hydrogen peroxide.
57. The antidote of acetylsalicylic acid poisoning is;
- Syrup of ipecac
  - Sodium bicarbonate
  - Vitamin K
  - Naloxone
58. When performing CPR (Cardio-Pulmonary Resuscitation ) the recommended ration for chest compressions to ventilation for two rescuers is:
- 15:2
  - 30:2
  - 15:5
  - 5:2
59. In the diagnosis of myocardial infarction which of the following creatinine kinase iso-enzyme is heart specific?
- Troponin
  - CK – MB
  - CK – BB
  - CK – MM
60. The appropriate intervention when direct pressure to a deep laceration on the client's lower leg has failed to stop bleeding is;
- Place a tourniquet proximal to the laceration
  - Elevate the leg above the level of the heart
  - Lower the laceration and apply and ice compression
  - Apply pressure to the femoral artery
61. The following statement BEST describes chronic pain;
- Takes a duration of 30 days or less
  - Can happen if acute pain is poorly managed
  - Chronic pain is not offensive
  - Chronic pain not easily diagnosed
62. . The most appropriate intervention for a client on radiotherapy and chemotherapy with micronutrient deficiency is;
- Administer large doses of vitamins
  - Stop chemotherapy

- c) Stop radiotherapy
  - d) Administer daily multivitamin and minerals
63. The following statements is true regarding oral sores in palliative care patients;
- a) Children rarely get oral sores
  - b) Mucositis is the common cause of oral sores
  - c) Candidiasis rarely cause oral sores
  - d) Steroid therapy is not useful in treating oral sores
64. A physician's refusal to comply with a client's refusal for treatment is;
- a) Violation of the patient's autonomy.
  - b) An example of beneficence.
  - c) Mandated by the law.
  - d) Surrogate decision-making
65. The following statement is a demonstration of catecholamine release in a painful biologic response:
- a) Pupil constriction
  - b) Decreased blood pressure
  - c) Decreased respiratory rate
  - d) Pupil dilation
66. The ethical principle that explains the reason for not intubating a patient with end stage lung cancer is;
- a) Maleficence
  - b) Justice
  - c) Beneficence
  - d) Autonomy
67. The type of pain experienced patient with peripheral neuralgia is;
- a) Somatic pain
  - b) Visceral pain
  - c) Neuropathic pain
  - d) Chronic pain
68. The following is the most appropriate measure for managing "death Rattle";
- a) Suctioning the patient will hurt the patient
  - b) Positioning the patient maximizes postural drainage
  - c) Death rattle is due to poor care and is unexpected
  - d) Use of antimuscarinic agents is dangerous
69. The grief process can best be described as;
- a) An abnormal condition requiring extensive counseling.
  - b) A time-limiting process occurring through specific stages.
  - c) A normal process of reacting to loss expressed through mental, physical and emotions
  - d) A universal experience involving shock, confusion, and reinvesting in life.
70. The following statement is true concerning breaking bad news:
- a) The children should be protected from bad news to protect them from post-traumatic stress syndrome
  - b) Miscommunication is often intentional

- c) Review what the family/ patient do not know
- d) Expression of feelings is encouraged

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