



AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

HIGHER DIPLOMA IN CRITICAL CARE NURSING

Course Unit: ACN119 Foundations of Critical Care Nursing

Date: 18th April 2023

Time: 2 hours

Start: 9.00 AM Stop: 11.00AM

Instructions

- 1) This paper has two sections: Section A Section B
- 2) Answer **ALL** questions in Section A and B
- 3) Use the University examination booklets provided
- 4) Re-writing the questions on your answer sheet is unnecessary

SECTION A (MULTIPLE CHOICE QUESTIONS): 50 MARKS

1. Critically ill patients have muscle wasting due to:-
 - A. High caloric demand
 - B. High oxygen demand
 - C. Increased metabolism
 - D. Nutritional imbalance
2. The drug of choice for prophylaxis of deep venous thrombosis is:-
 - A. Warfarin
 - B. Heparin
 - C. Clexane
 - D. Metalase
3. Bleeding tendencies are most common in patients with elevated:-
 - A. D -Dimmers
 - B. INR (International normalized ratio)
 - C. Troponin
 - D. Pro Calcitonin
4. Single room intensive care unit (ICU) layout is highly preferred because:-
 - A. It saves space
 - B. Enhances effective infection control
 - C. Requires less staffing
 - D. Patient privacy is maintained
5. The following is an emerging stressor for critical care managers due to global changes in critical care medicine:-
 - A. High patient mortality
 - B. Increased clinical incidences
 - C. High staff turnover
 - D. Demotivation among staff members
6. As per the current guidelines, the ideal sample for septic screening is:-
 - A. Blood culture
 - B. Urine culture
 - C. Groin swab for culture
 - D. Axillary swab for culture
7. Endotracheal aspirate for culture and sensitivity is obtained routinely :-
 - A. Every 24 hours
 - B. After 72 hours
 - C. After every 7 days
 - D. PRN (when necessary)
8. The main goal in patient management in a critical care unit is:-
 - A. To preserve life
 - B. Prevent complications
 - C. Restore the patient to his maximum function capacity
 - D. Improve and safeguard patient outcome

9. Which infection prevention measure do you take when managing a patient with Cytomegalovirus infection (CMV)?
- A. Airborne precautions
 - B. Droplet precautions
 - C. Direct Contact precautions
 - D. Barrier nursing precautions
10. The following measure is not practiced when managing Covid 19 patients in an intensive care unit:-
- A. DNR (Do not resuscitate)
 - B. Closed suctioning
 - C. Ventilator guided nebulisation
 - D. Chest physiotherapy
11. The following sedative does not cause hemodynamic instability:-
- A. Remifentanyl
 - B. Propofol
 - C. Succylcholine
 - D. Dexemetidine
12. The least desirable characteristic of an ideal sedative is:-
- A. Anxiolysis
 - B. Pain relief
 - C. Amnesia
 - D. Easy arousability
13. The following is a depolarizing neuromuscular blocker:-
- A. Rocuronium
 - B. Neostigmine
 - C. Ephedrine
 - D. Propofol
14. The following bug in an Intensive Care Unit (ICU) warrants fumigation of the entire department:-
- A. MRSA(Methicillin resistant staphylococcus aureus)
 - B. VRSA (Vancomycin resistant staphylococcus aureus)
 - C. Acinobacter
 - D. All of the above
15. The best quality indicator in an intensive care unit is:-
- A. Morbidity and mortality
 - B. Incidence reports
 - C. Staff Turnover
 - D. Customer care feedback
16. Immunoglobulin G (IgG) is:-
- A. Responsible for secondary antibody response
 - B. Produced when an antigen is encountered for the first time
 - C. Responsible for defense against invasion of microorganisms through body mucous membranes
 - D. The mediator of immediate reactions

17. The following statement is true about heparin induced thrombocytopenia;
- A. Patients are at great risk of thrombosis than bleeding
 - B. Patient are at greater risk of bleeding than thrombosis
 - C. Patient have sudden drop of 75% of the baseline platelets
 - D. Patient who have received low molecular weight heparin are not at risk
18. Hemolytic disease of a new born is as a result of;
- A. A rhesus negative mother developing antigen against erythrocytes of a Rhesus positive fetus
 - B. A rhesus negative mother developing antibodies against erythrocytes of a Rhesus positive fetus
 - C. A rhesus positive mother develops antibodies against erythrocytes of a fetus who has ABO incompatibility
 - D. A rhesus negative mother develops antibodies against erythrocytes of a fetus who has ABO incompatibility
19. The following is a part of the first line of defence; Macrophages
- A. Natural killer cells
 - B. Cough reflex
 - C. Phagocytes
20. One of the conditions below precipitates Disseminated Intravascular Coagulation (DIC);
- A. Acute kidney injury
 - B. Amniotic fluid embolism
 - C. Intracorporeal circulation
 - D. Head injury
21. The following are **extrinsic** factors associated with septic shock;
- A. Invasive devices
 - B. Malnutrition
 - C. Extreme age
 - D. Comorbid conditions
22. In HIV disease, the Human immunodeficiency virus invades and incapacitates;
- A. Cytotoxic T cells
 - B. T Helper cells
 - C. B lymphocytes
 - D. Complement system

23. The most-life threatening complications of ITP- Idiopathic thrombocytopenia is;
- A. Clotting
 - B. Hemorrhage
 - C. Micro-emboli
 - D. Ecchymosis
24. The effect of Disseminated Intravascular Coagulation (DIC) on Prothrombin Time (PT) , partial thromboplastin time (PTT), platelets, Fibrin degradation products (FDPs) is; PT prolonged, PTT prolonged, Platelets decreased, Fibrin split products: decreased.
- A. PT prolonged, PTT prolonged, Platelets increased, Fibrin split products increased.
 - B. PT prolonged, PTT prolonged, Platelets decreased, Fibrin split products increased.
 - C. PT prolonged, PTT decreased, Platelets decreased, Fibrin split products increased.
25. The top 3 priorities in care of the client with sickle-cell crisis is;
- A. Hydration, pain control, feeding
 - B. Oxygenation, Hydration, pain control
 - C. Pain control, dehydration, oxygenation
 - D. Feeding, hydration, oxygenation
26. An elevated D Dimers level indicates: -
- A. Clotting
 - B. Haemorrhage
 - C. Micro-emboli
 - D. Ecchymosis
27. The following infusion is best recommended for a patient with Disseminated Intravascular Coagulation (DIC);
- A. Cryoprecipitate
 - B. Whole blood
 - C. Fresh frozen plasma
 - D. Albumin
28. Inflammation is characterized by;
- A. Vasoconstriction of the local blood vessels
 - B. Decreased permeability of the capillaries
 - C. A decreased amount of fibrinogen
 - D. Migration of granulocytes and monocytes into the tissues

29. The presence of two of the following symptoms indicate Systemic Inflammatory response syndrome;
- A. Temperature $< 36^{\circ}\text{C}$, WBC $> 12,000\text{cells}/\text{mm}^3$
 - B. WBC $< 12,000\text{cells}/\text{mm}^3$, $\text{Pao}_2 > 32\text{mmhg}$
 - C. Heart rate $> 90\text{B}/\text{min}$, WBC $> 12,000\text{cells}/\text{mm}^3$
 - D. $\text{Pao}_2 > 32\text{mmhg}$, Temperature $< 36^{\circ}\text{C}$
30. The following organ is a primary lymphoid tissue;
- A. Adenoid
 - B. Tonsil
 - C. Thymus gland
 - D. Appendix
31. If a researcher does not control extraneous variables, the following may be affected;
- A. External validity
 - B. Reliability
 - C. Generalizability
 - D. Internal validity
32. Examples of quantitative research include;
- A. Correlational, phenomenological
 - B. Descriptive, Quasi-experimental
 - C. Experimental, grounded theory
 - D. Clinical trial, Correlational
33. Sampling error is;
- A. When there are differences between variables
 - B. Discrepancy between sample and population characteristics
 - C. When many subjects in a study drop out
 - D. When the accessible population is highly heterogeneous.
34. One of the following factors distinguishes true experimental research from quasi-experimental research;
- A. Size of the sample
 - B. The non-probability samples
 - C. Random assignment of subjects to groups
 - D. The introduction of an experiment treatment

35. Literature review is conducted in order to;
- A. Test hypothesis in a study
 - B. Synthesize what is known about a research topic
 - C. Determine the area of study for a particular research
 - D. Determine and compare relative cost of study
36. You plan to conduct a research on the level of knowledge of staff regarding presentation of DVT. During the study; a campaign is launched to educate nurses on this concept. This campaign presents a variable in your research known as;
- A. Antecedent
 - B. Intervening
 - C. Confiding
 - D. Dependent
37. The hypothesis that uses terminologies like greater than is;
- A. Null
 - B. Directional
 - C. Non directional
 - D. Statistical
38. The ethical principle of non-maleficence requires the researcher to;
- A. Obtain informed consent from the participant
 - B. Ensure that the participants are protected from any harm
 - C. Conduct research that will benefit the participant
 - D. Refrain from research for personal gains
39. An error that is created by **NOT** rejecting a null hypothesis when it is true is;
- A. Sampling error
 - B. Type II error
 - C. Type I error
 - D. False negative error
40. In the hypothesis “Oxygen inhalation by nasal cannula does not affect oral temperature measurement taking by an electronic thermometer”, the dependent variable is;
- A. Oxygen inhalation
 - B. Oxygen inhalation by nasal cannula
 - C. Oral temperature measurement
 - D. Electronic thermometer

41. A study design that focuses on finding solutions to an existing problem is;
- A. Action Research
 - B. Applied research
 - C. Longitudinal research
 - D. Problem solving research
42. The list of elements from which a sample is drawn is known as;
- A. Study population
 - B. Sampling frame
 - C. Sample size
 - D. Target population
43. Research hypothesis “There is no difference in the mean score between the Private run institutions and the mean score for the public run institutions in the NCK examination” The following equation is correct;
- A. $H_1: \mu_1 \neq \mu_2$
 - B. $H_0: \mu_1 > \mu_2$
 - C. $H_0: \mu_1 \neq \mu_2$
 - D. $H_0: \mu_1 < \mu_2$
44. The list of subjects in a research project is referred to as;
- A. Sampling error
 - B. Sample size
 - C. Sampling frame
 - D. Sample Outline
45. A study design that assesses culture, traditions and beliefs is referred to as;
- A. Quantitative research
 - B. Ethnographic study
 - C. Experimental design
 - D. Correlation design.
46. Hawthorne effect in research is as a result of;
- A. The researcher participating in own research
 - B. Participants being unaware that they are participating in research
 - C. Participants being aware that their behaviour is being observed
 - D. Failure to randomly select study participants

47. The median in the following data is;
10, 11, 15, 17, 12, 13, 11, 12
- A. 12
 - B. 11
 - C. 6
 - D. 7
48. Systematic sampling requires that;
- A. The population be divided into groups
 - B. The population of interest exists in known strata
 - C. Every n^{th} element is selected
 - D. All subjects are given equal chance of being selected
49. Validity refers to;
- A. The degree to which a study meets the stated objective
 - B. The degree to which an instrument measures what it is supposed to measure
 - C. The degree to which an instrument gives consistent results when used several times
 - D. The degree to which research findings can be generalized to the entire population
50. Essential information given to a respondent before obtaining consent include;
- A. Description of risks and discomfort
 - B. Promise to share research outcome
 - C. The research time plan
 - D. The cost implications of the research

SECTION B: LONG ANSWER QUESTIONS (20 marks)

1. Mr. A. M. is admitted in the Intensive Care Unit (ICU) and has been diagnosed with acute pancreatitis.
- a. Outline five (5) classical clinical presentations of acute pancreatitis (5 marks)
 - b. Outline five (5) functions of the pancreas (5 marks)
 - c. Describe the specific management of a patient with acute pancreatitis (10 marks).