



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCES  
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES  
END OF SEMESTER DECEMBER 2023 EXAMINATIONS  
HIGHER DIPLOMA IN CRITICAL CARE NURSING**

**COURSE CODE AND TITLE: ACN 119 FOUNDATIONS OF CRITICAL CARE NURSING**

**DATE: 11<sup>TH</sup> DECEMBER 2023**

**Duration: 2 HOURS**

**Start: 11:15 AM**

**Finish: 1:15 PM**

**INSTRUCTIONS**

- 1.** This exam is out of 100 Marks
- 2.** This Examination comprises THREE Sections. Section I: Multiple Choice Questions (60 marks) Section II: Short Answer Questions (20 marks) and Section III: Long Answer Questions (20 marks)
- 3.** Answer ALL Questions.
- 4.** Do Not write anything on the question paper -use the back of your booklet for rough work if need be.

**SECTION I: MULTIPLE CHOICE QUESTIONS****(60 Marks)**

1. Exophthalmos is often associated with:
  - A. Hashimoto's disease
  - B. Graves' disease.
  - C. Autoimmune hemolytic anemia.
  - D. Primary myxedema
2. The typical clinical manifestations of Systemic inflammatory response syndrome (SIRS) are: -
  - A. Hypertension, hypothermia and chills
  - B. Hyperthermia, Tachypnoea, Tachycardia
  - C. Hypothermia, Bradycardia, dysnoea
  - D. Kussmaul breathing, tachypnea, bradypnea
3. The statement that BEST describes how Heparin works as an anticoagulant is: -
  - A. "It inhibits the synthesis of vitamin K in the liver."
  - B. It binds to prothrombin and reverses the clotting process
  - C. It potentiates the inhibitory effect of factor x and thrombin
  - D. It potentiates aggregation of platelets
4. An important role of fever in the immune response is: -
  - A. Denaturation of proteins
  - B. Irreversible brain damage
  - C. Inhibits reproduction of bacteria and viruses
  - D. Inhibit phagocytosis
5. Cell mediated immunity is carried out by: -
  - A. B lymphocytes
  - B. T lymphocytes
  - C. Antigen mediated immunity
  - D. Macrophages
6. Chemotaxis refers to: -
  - A. Blood cells move away from source of infection
  - B. Blood cells move towards source of infection
  - C. Blood cells undergo apoptosis
  - D. Blood cells clump together to form a clot
7. The blood product administered to a patient suffering from Hemophilia A is: -
  - A. Fresh frozen plasma
  - B. Factor IX concentrate
  - C. Factor VIII concentrate
  - D. Plasma volume expanders
8. A patient with severe anemia is on second pint of blood transfusion and exhibits signs of dyspnea, tachycardia and anxiety. Identify the complication below: -
  - A. Acute hemolytic reaction
  - B. Transfusion lung-related injury
  - C. Circulatory overload
  - D. Allergic reaction

9. Allogeneic transplant refers to: -
- A. Replacing healthy stem cells with diseased cells, from one's own body
  - B. Replacing healthy stem cells from a donor to a recipient
  - C. Treatment for Von will brand disease
  - D. Replacing platelets from a donor
10. The result that will be most likely be abnormal in a child with Hemophilia is;
- A. Platelet count
  - B. Hemoglobin level
  - C. Partial thromboplastin time
  - D. Hematocrit level
11. A substance that promotes phagocytosis of antigens by binding to them is called;
- A. macrophages
  - B. phagocytes
  - C. opsonins
  - D. Interleukins
12. The major effector molecules involved in type IV hypersensitivity reactions are
- A. Antibodies.
  - B. Complement components
  - C. Prostaglandins.
  - D. Cytokines
13. The following is true about IgG of humans;
- A. Can cross placenta
  - B. Produced by low affinity plasma cells
  - C. Primarily is restricted in circulation
  - D. Cannot cross the placenta
14. The following statements is true regarding the diagnosis of the HIV/AIDS: -
- A. A low CD4+ T cell count ( $>200$  cells/mm<sup>3</sup>)
  - B. It occurs at the early stage of the HIV infection
  - C. The person with AIDS can live up to 10 years
  - D. The virus is usually in a dormant state during this stage
15. The following protease inhibitor drug is used as a highly active antiretroviral therapy (HAART), in a combination regimen with other antiretroviral drugs;
- A. Efavirenz
  - B. Indinavir
  - C. Ritonavir
  - D. Zidovudine
16. The envelope protein gp120 (Glycoprotein 120) is required for the attachment of the HIV virus to CD4 receptors of target host cells. Identify the immune cells that consist of CD4 receptors:
- A. Dendritic cells
  - B. Monocytes
  - C. Macrophages
  - D. T helper cells

17. The following statements is true about blood donors: -
- A. Relatives of the recipient are preferred
  - B. Males are preferred to females
  - C. Must be negative for antibodies to human immunodeficiency virus (HIV) I and II
  - D. Must be negative for antibodies to cytomegalovirus (CMV)
18. The important role of corticosteroids in patients with Bone marrow transplant is: -
- A. Reduction of White blood cells
  - B. Prevent graft versus host disease
  - C. Increase production of Red blood cells
  - D. Prevent allergic reactions
19. The following is the site for T cell maturation: -
- A. Bone marrow
  - B. Tonsils
  - C. Thymus
  - D. Spleen
20. The report consistent with a diagnosis of thrombocytopenia is: -
- A. Platelets below 1000,000 per microliter
  - B. Platelets below 20,000 per microliter
  - C. Haemoglobin 16 gm/dl
  - D. Haemoglobin 13 gm/dl
21. The lab result the nurse expects in a patient diagnosed with DIC is: -
- A. A decreased prothrombin time (PT)
  - B. An increased platelet count
  - C. A low level of fibrinogen
  - D. An increased white blood cell count
22. A 25-year-old female with a diagnosis of Hemolytic uremic syndrome is admitted with severe diarrhea and vomiting. The priority nursing intervention will be: -
- A. Administer antipyretic drug
  - B. Check for pupillary reaction
  - C. Assess skin turgor
  - D. Check bowel sounds
23. The common cause of iron deficiency anemia in men is: -
- A. Vegetarian diet
  - B. Chronic occult bleeding
  - C. Vitamin C deficiency
  - D. Chronic intravascular hemolysis
24. The following confers the longest-lasting immunity to an infectious agent: -
- A. Naturally acquired passive immunity
  - B. Artificially acquired passive immunity
  - C. Naturally acquired active immunity
  - D. Innate Immunity

25. A nurse researcher conveniently assigned patients into the control and experiment group. This research design is: -
- A. Convenience design
  - B. True experiment
  - C. Quasi-experiment
  - D. Comparative design
26. The list of elements from which sample is drawn is known as: -
- A. Study population
  - B. Sampling frame
  - C. Sample size
  - D. Target population
27. The following statement is true: -
- A. Quantitative research involves a smaller number of subjects with in-depth data
  - B. Ethnographic studies describe patterns of behavior of people within a culture
  - C. An experimental design is an example of a qualitative research
  - D. Correlation method of research is a qualitative research design.
28. In participant observation research:
- A. The researcher functions as part of the group being studied
  - B. The event is observed by researchers after it has occurred
  - C. The researcher uses research assistants to collect data
  - D. The subjects are aware they are being observed
29. 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
30. You plan to conduct a research on knowledge level of staff on COVID 19. During the study; staff are trained on COVID 19. This training represents: -
- A. Antecedent variable
  - B. Intervening variable
  - C. Independent variable
  - D. Dependent variable
31. An error that is created by rejecting a null hypothesis when it is true is:
- A. Sampling error
  - B. Type II error
  - C. Type I error
  - D. Population error
32. Research design where the researcher collects data at one point in time is referred to as:
- A. Exploratory research
  - B. Longitudinal
  - C. Ex-post facto
  - D. Cross sectional

33. If a researcher does not control extraneous variables, the following may be affected: -
- A. External validity
  - B. Reliability
  - C. Generalizability
  - D. Internal validity
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. Research hypothesis “There is no difference between mean score between the Private the public run institutions in the final examination” The following equation is correct: -
- A.  $H_0: \mu_1 = \mu_2$
  - B.  $H_0: \mu_1 > \mu_2$
  - C.  $H_0: \mu_1 \neq \mu_2$
  - D.  $H_0: \mu_1 < \mu_2$
36. The following is a non- probability sampling designs: -
- A. Descriptive
  - B. Correlational
  - C. Ethnography
  - D. Experimental
37. Objectivity in research means: -
- A. Assignment of numbers to events accurately
  - B. Use of measurement that provides different levels of responses
  - C. Use of facts without distortion by personal feelings
  - D. Translating concepts into observable measurable phenomenon
38. The sampling method that allows the researcher to use any group of research subjects is the: -
- A. Purposive sampling
  - B. Convenience sampling
  - C. Snow-ball sampling
  - D. Systematic sampling
39. 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

40. In the following data;  
10, 11, 15, 17, 12, 13, 11, 12  
The median is
- A. 12
  - B. 11
  - C. 6
  - D. 7
41. Cluster sampling requires that: -
- A. The population be divided into groups
  - B. The population of interest exists in known strata
  - C. Every  $n^{\text{th}}$  element is selected
  - D. All subjects are given equal chance of being selected
42. Pretesting the questionnaire is done in order to: -
- A. Enhance the reliability of the study tool
  - B. Sensitize the sample population on the study
  - C. Allow the researcher predict the resources needed for the study
  - D. Enable the researcher predict the findings of the study
43. The following statement BEST describes plagiarism: -
- A. Referencing someone's work with mistakes
  - B. Work that does not meet the quality threshold
  - C. Passing someone else's work as your own
  - D. Advancing another person's research
44. The ex post facto studies are also known as: -
- A. Prospective
  - B. Retrospective
  - C. Longitudinal
  - D. Descriptive
45. A nurse is revising a client's care plan. The step of the nursing process where such a revision take place is: -
- A. Assessment
  - B. Planning
  - C. Evaluation
  - D. Implementation
46. The purpose of nursing process is: -
- A. Assisting family members in making important healthcare decisions
  - B. Providing nurses with a framework to aid them in delivering comprehensive care.
  - C. Help other healthcare professionals know what is going on with the client
  - D. Organize information so the doctor knows what is wrong with the client
47. The fundamental principle for providing the best nursing care to a critically ill patient is;-
- A. Prioritizing administrative tasks
  - B. Focusing on cost-efficiency
  - C. Promoting patient safety and well-being
  - D. Minimizing communication with the patient

48. The primary purpose of the Nurses' Code of Ethics in the ICU is;-
- A. Ensuring maximum profits for the hospital
  - B. Providing strict guidelines for patient care
  - C. Promoting ethical decision-making and compassionate care
  - D. Restricting patient access to medical information
49. You are examining a patient with acute abdomen. One of your findings is high pitched peristalsis and abdominal distention. High-pitched peristalsis or borborygmi in a patient with acute abdominal pain and distention suggests: -
- A. Peritonitis
  - B. Bowel obstruction
  - C. Renal colic
  - D. Pancreatitis
50. Mr. Mark is admitted with a diagnosis of hepatic encephalopathy secondary to cirrhosis. His ammonia levels dropped to normal in the first 24 hours and he has 2 spontaneous bowel movements. He remains in coma. The following intervention is a priority: -
- A. Lactulose
  - B. N-acetylcysteine
  - C. Sodium polystyrene
  - D. Glutamine supplements
51. Mr. Sing has a massive GI bleed from a gastric ulcer. Following 12 units of packed cells and 4 units of fresh frozen plasma, he has the following labs: Hb 8.5 g/dl Platelets 82,000 INR 1.9 aPTT 58 and fibrinogen 0.4 g/L (normal 2-4 g/L). The following intervention is the priority: -
- A. Potassium bolus
  - B. Octreotide
  - C. Cryoprecipitate
  - D. Protamine sulphate
52. Mr. Q is admitted to your ICU unit with acute alcoholic pancreatitis. He has temp 38.5, WBC 14000, elevated neutrophils. He has received 4 liters of fluid therapy, his current BP is 117/80 mmHg and HR 123b/min. His urine output has improved from 10mls to 60mls/hr. He currently demonstrates worsening hypoxemia. The following explains these findings;
- A. Sepsis
  - B. Severe sepsis
  - C. Septic shock
  - D. Systemic inflammatory response syndrome
53. The following sign is indicative of a potential tension pneumothorax in a patient with chest trauma
- A. Bradycardia
  - B. Subcutaneous emphysema
  - C. Hypotension
  - D. Normal breath sounds



54. The following is the nurse's role in prevention of ventilator-associated pneumonia: -
- A. Adherence to VAP prevention hospital protocols
  - B. Being knowledgeable about evidenced based practices
  - C. Compliance to hospital infection control and hand washing guidelines
  - D. Regular changing patient position
55. Critically ill patients admitted to the critical care unit may experience muscle wasting. The main cause of muscle wasting in critically ill patients is;
- A. High caloric demand
  - B. High oxygen demand
  - C. increased metabolism
  - D. Nutritional imbalance
56. The primary goal of conflict resolution in a hospital
- A. Assigning blame
  - B. Encouraging competition among staff
  - C. Promoting open communication and collaboration
  - D. Avoiding conflict at all costs
57. Mr. Fever had an ischemic bowel requiring urgent total colectomy and ileostomy and TPN. One week following admission to ICU, his Alanine Aminotransferase (ALT) and his Aspartate Aminotransferase (AST) double, and his alkaline phosphatase and direct bilirubin increase 4 fold. His lipase and pancreatic amylase are mildly elevated and his ammonia is normal. These findings are most consistent with;
- A. Hepatic ischemia
  - B. Biliary track disease
  - C. Pancreatitis
  - D. Hemolysis
58. The patient has vomiting that is very similar to coffee grounds. Where can the location of the bleeding be?
- A. Upper GI Tract
  - B. Colon
  - C. Rectum
  - D. ileum
59. The order of the abdominal assessment is: -
- A. Inspection, auscultation, percussion, palpation
  - B. auscultation, percussion, palpation, inspection
  - C. Palpation, percussion, inspection, auscultation
  - D. Inspection, percussion, palpation, auscultation
60. The most important factor in deciding if one of the patients in ICU needs infection control precautions beyond Standard Precautions is:
- A. The risk of transmission
  - B. The antibiotic regimen
  - C. The patient's diagnosis only
  - D. Glycemic control

**SECTION II: SHORT ANSWER QUESTIONS-** (20 MARKS)

1. State five (5) nursing responsibilities for a patient scheduled for blood transfusion (5 marks)
2. Outline five (5) medical interventions of Systemic Lupus Erythematosus (5 marks)
3. State five (5) ethical principles that must be considered in clinical nursing research (5 marks)
4. State five(5) ways you would disseminate the research study findings (5 marks)

**SECTION III: LONG ANSWER QUESTIONS-** (20 MARKS)

1. Mr. Q is admitted in the Intensive Care Unit (ICU) and has been diagnosed with acute pancreatitis.
  - a. Outline four (4) clinical presentations of acute pancreatitis (2 Marks)
  - b. State two diagnostic tests useful in pancreatitis for this patient. (3 Marks)
  - c. Outline five (5) possible nursing diagnosis for this patient. (5 Marks)
  - d. Describe the specific management of a patient with acute pancreatitis (10 Marks)