



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES
BACHELOR OF SCIENCE IN NURSING
END SEMESTER APRIL 2022 EXAMINATION**

BSN 221: CLINICAL CHEMISTRY & HAEMATOLOGY

DATE: 5th April, 2022

TIME: 9:00 AM -11:00 AM

INSTRUCTIONS

- 1. This exam will be marked out of 70 Marks**
- 2. This Examination comprises THREE Sections. Section I: Multiple Choice Questions, Section II: Short Answer Questions and Section III: Long Answer Questions**
- 3. Answer ALL Questions in Section I & Section II and only one question section III.**

SECTION I: MULTIPLE CHOICE QUESTIONS (MCQs)-20 MARKS

1. The following is the correct diagnostic criterion for establishing diabetes
 - A. Fasting blood glucose greater than 7.0mmol/L
 - B. Fasting blood glucose greater than 4.0mmol/L
 - C. Fasting blood glucose greater than 2.0mmol/L
 - D. Fasting blood glucose greater than 20.0mmol/L

2. The measurement that is a better criterion for the differential diagnosis of jaundice is;
 - A. Conjugated bilirubin
 - B. Delta bilirubin
 - C. Unconjugated bilirubin
 - D. Total bilirubin

3. One of the following statements about serum calcium is not correct
 - A. Free or ionized calcium accounts for 50% of total calcium
 - B. Protein bound calcium most of which is bound to globulins with only small portion bound to albumin.
 - C. Complex-bound calcium is bound to phosphates, citrate and bicarbonate.
 - D. The protein-bound calcium accounts for 45% of the total calcium

4. Alkalosis or a rise in pH, after the blood collection, causes a decrease in ionized calcium due to the elimination of:
 - A. Oxygen
 - B. Hydrogen
 - C. Carbon dioxide
 - D. Chloride

5. The gold standard for the glomerular filtration is
 - A. Urea clearance
 - B. Creatinine clearance
 - C. Insulin clearance
 - D. Uric acid clearance

6. The following conditions is associated with hyponatremia with an Extracellular Fluid Volume (ECFV) excess and high total body sodium;
- A. Liver cirrhosis
 - B. Pancreatitis
 - C. Hypothyroidism
 - D. Salt-losing nephritis
7. A Nursing personnel was asked to send a blood specimen from HIV-positive patient for blood chemistry to a laboratory. The specimen must be properly labeled and shipped as:
- A. Diagnostic specimen.
 - B. Biological product
 - C. Infectious diseases
 - D. Clinical specimen
8. A corrosive material was spilled onto the hand of a Nurse staff. After diluting the material under running cold water, what should be done next?
- A. Consult Material Safety Data Sheet (MSDS).
 - B. Wipe up spills with paper towel.
 - C. Dilute spills and remove it in a biohazard bag.
 - D. Go to the emergency room and rest.
9. The preservative added to urine to be used for biochemical Analysis is;
- A. Hydrochloric acid
 - B. Toluene
 - C. Formalin
 - D. Thymol
10. Alkaline phosphates is elevated in the following disorder;
- A. Addisons disease
 - B. Paget's diseases
 - C. Diabetes insipidus
 - D. Scleroderma

11. Purple top tube is ideal for collecting blood for Haemogram test which possesses

- A. Sodium citrate
- B. Lithium heparin
- C. Ethylene Diamine Tetra-Acetic Acid (EDTA) liquid
- D. Sodium heparin

12. Which one of the following Synonyms of blood coagulation factors is CORRECTLY matched?

- A. Factor I Prothrombin
- B. Factor IV Calcium
- C. Factor VII Fibrinase
- D. Factor III Hageman factor

13. The Anticoagulant and preservative used in blood collection and storage for blood transfusion is?

- A. Lithium heparin
- B. Ethylene Diamine Tetra-Acetic Acid (EDTA) liquid
- C. Sodium citrate
- D. Citrate phosphate dextrose adenine

14. Agranulocytes cells include

- A. Eosinophils
- B. Lymphocytes
- C. Neutrophils
- D. Monocytes

15. The following is an intrinsic blood coagulation test:

- A. Platelet disorder test
- B. Activated partial prothrombin time
- C. Complete blood count
- D. Blood factors test

16. The most commonly used blood grouping system is:

- A. Lewis blood grouping system
- B. MNs blood grouping system
- C. Kell blood grouping system
- D. ABO blood grouping system

17. The following is a site of hematopoiesis in post-natal period?

- A. Bone marrow
- B. Kidney
- C. Spleen
- D. Yolk sac

18. Vasodilation and bronchoconstriction would be associated with which of the following blood cells?

- A. Eosinophilic
- B. Basophils
- C. Monocytes
- D. Neutrophils

19. The following blood component is used in treatment of Von Willebrand disease

- A. Fresh frozen plasma

- B. Cryoprecipitate
- C. Deglyceralised blood
- D. Factor VIII concentrate

20. The following will correlate with elevated Erythrocyte sedimentation rate (ESR) value

- A. Osteoarthritis
- B. Polycythemia
- C. Decreased globulins
- D. Inflammation

SECTION II: SHORT ANSWER QUESTIONS- (30 MARKS)

1. Explain the mandatory Pre-transfusion tests for blood donors (5 Marks)
2. Using well illustrated diagrams, give the stages of Leucopoiesis (5 marks)
3. Describe the Red blood cell indices and for each give the normal range (5 marks)
4. State the morphologic classification of anemia (5 marks)
5. State FIVE conditions under which specimens for Clinical Chemistry analysis can be rejected in the Laboratory (5 marks)
6. Discuss the Clinical applications for Liver Function Tests (5 Marks)

SECTION III: LONG ANSWER QUESTIONS (LAQs)- 20 MARKS)-Answer ALL questions

1. Discuss transfusion reactions which may occur to a patient during or immediately after blood transfusion (10 marks)
2. Describe FIVE factors that determine blood glucose level in the body (10 marks)