

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**  
**EXAMINATION FOR THE AWARD OF**  
**BACHELOR OF SCIENCE NURSING**

**NURS 218 / NURU 123: CLINICAL CHEMISTRY**

**STREAM: Bsc NURSING Up (Upgrading)**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 9/04/2020**

**2.30 P.M – 4.30 P.M.**

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**INSTRUCTIONS**

- Do not write anything on the question paper.
- Mobile phones and any other reference materials are NOT allowed in the examination room.
- The paper has three sections. Answer ALL questions
- All your answers for Section I (MCQs) should be on one page.
- Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.

**SECTION A: MULTIPLE CHOICE QUESTIONS**

**[20 MARKS]**

1. A biochemical test that returns the same results after measuring the same sample repeatedly can be said to be:
  - a) Precise
  - b) Specific
  - c) Accurate
  - d) Sensitive

2. The most commonly used biochemical specimen for biochemical tests is:
  - a) Urine
  - b) Whole blood
  - c) Serum
  - d) Plasma
  
3. Gray top tubes are usually used for collecting a blood specimen for analyzing:
  - a) Potassium
  - b) Glucose
  - c) Sodium
  - d) Proteins
  
4. The most important consideration when determining the site of blood specimen collection is:
  - a) Ease of collection
  - b) Vascular status
  - c) Turn-around time
  - d) Analyte under investigation
  
5. Major source of volatile acid in the body is:
  - a) Complete metabolism of fats and carbohydrates
  - b) Retention of carbon dioxide
  - c) Oxidation of proteins and nucleic acids
  - d) Incomplete metabolism of carbohydrates and fats
  
6. Which of the following is likely to increase the blood PH:
  - a) Hyperventilation
  - b) Hypoventilation
  - c) Excretion of bicarbonate
  - d) Retention of hydrogen ions
  
7. A blood gas analysis returned the following results: PH:7.25; SBC: 26 mmol/l; PCO<sub>2</sub>: 15kPa. These findings are indicative of:
  - a) Uncompensated metabolic acidosis
  - b) Uncompensated respiratory acidosis
  - c) Partially compensated metabolic acidosis
  - d) Partially compensated respiratory acidosis

8. To prevent false elevation of potassium levels, the following precaution should be taken during sample handling:
  - a) Apply a tight tourniquet
  - b) Store the specimen overnight
  - c) Use a large bore needle
  - d) Vigorously shake the tube after sample collection
  
9. Causes of hyperkalemia include all of the following EXCEPT:
  - a) Insulin deficiency
  - b) Metabolic acidosis
  - c) Erythrocyte hemolysis
  - d) Hyperaldosteronism
  
10. Creatinine levels in the blood is influenced by:
  - a) Age of the patient
  - b) Sex of the patient
  - c) Meal intake
  - d) Vascular status
  
11. Uremia is likely to be encountered in :
  - a) Low protein intake
  - b) Liver disease
  - c) Starvation
  - d) Overhydration
  
12. Absence of urine urobilinogen is indicative of:
  - a) Billiary obstruction
  - b) Increased bilirubin conjugation
  - c) Increased re-uptake of bile
  - d) Dubin –Johnson syndrome
  
13. Liver enzymes indicative of liver cell damage include:
  - a) Lactate dehydrogenase
  - b) Alkaline phosphatase
  - c) Creatine kinase
  - d) Gamma Glutamyl Transpeptidase

14. Lipoprotein fraction with the highest cholesterol level is:
- LDL
  - HDL
  - VLDL
  - IDL
15. A lipid profile includes all of the following EXCEPT:
- Total cholesterol
  - IDL-C
  - VLDL-C
  - Triglycerides
16. Total cholesterol levels of 10 Mmol /L is indicative of:
- Normal level
  - Moderate hypercholesterolemia
  - Severe hypercholesterolemia
  - Very severe hypercholesterolemia
17. The predominant lactate dehydrogenase isoenzyme in the liver is:
- LD1
  - LD2
  - LD4
  - LD5
18. Which of the following enzyme is NOT used in the assessment of cardiac function:
- Creatine Kinase
  - Lactate dehydrogenase
  - AST
  - GGT
19. Pyruvate is converted into acetyl coA that enters the Krebs's cycle. This requires enzyme:
- LDH
  - PDH
  - Pyruvate carboxylase
  - NADPH Oxidase

20. Metabolic acidosis occurs in diabetic patients because of:
- a) Osmotic diuresis resulting in dehydration
  - b) Failure to utilize glucose
  - c) Enhanced gluconeogenesis
  - d) Impaired oxygen delivery to the tissues.

**SECTION B: SHORT ANSWER QUESTIONS. [35 MARKS]**

- 1. Giving an example, outline four (4) purpose of biochemical tests. [4 Marks]
- 2. Explain three (3) causes of unconjugated hyperbilirubinemia. [5 Marks]
- 3. Classify enzymes giving an example of each. [6 Marks]
- 4. State (5) features of type 1 diabetes mellitus. [5 Marks]
- 5. Describe the Oral Glucose Tolerance Tests (OGTT) protocol. [5 Marks]
- 6. Outline four (4) measures you would take to into consideration when collecting a specimen for potassium levels. [4 Marks]
- 7. Compare and contrast hypertonic and isotonic fluid loss. [5 Marks]

**SECTION C: LONG ANSWER QUESTIONS [15 MARKS]**

- 1.a) Outline five indications of renal function tests. [5 Marks]
  - b) Discuss five (5) types of chemical tests that can be carried out on a urine specimen indicating the implication of each positive result. [10 Marks]
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