

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.

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; PCO₂: 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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