



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF PURE, APPLIED AND HEALTH SCIENCES

DEPARTMENT OF HEALTH SCIENCES

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR

OF SCIENCE IN NURSING

MML 125 – CLINICAL CHEMISTRY

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer ALL questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A – MULTIPLE CHOICE QUESTIONS (20 MARKS)

- Which of the following is a characteristic of quantitative analytical technique result?
 - Expressed as a concentration
 - Accompanied with a unit of measure
 - Expressed as positive or negative
 - Interpreted using reference ranges
- Which of the following statement describes the main cause of inborn errors of metabolism?
 - A defect of single genes that code for enzymes that facilitate conversion of various substances into others.
 - Growth hormonal imbalance
 - Defects of extracellular fluids enzymes that control.
 - Accumulation of substances which are toxic or interfere with normal function of the liver.
- Which of the following can be regarded as an abnormal protein?
 - Albumin
 - Alpha 1 globulin
 - Beta globulin
 - Bence jones protein
- A pathological condition where there is proteinuria is called?
 - Nephritic syndrome
 - Wilson's syndrome
 - Zollinger Erickson syndrome
 - Dumping syndrome
- Laboratory work can be compromised by the following pre-analytical errors
 - Specimen from the wrong patient
 - Use of wrong analytical procedure
 - Wrong reference ranges
 - Use of wrong analytical procedure
- Quantitative tests results are reported as
 - Positive only
 - Negative only
 - Positive or negative
 - Mmol/L
- Which of the following is not an anticoagulant used in blood specimen collection;
 - EDTA
 - Heparin
 - Sodium fluoride
 - Toluene
- The best anti-coagulant for collecting blood for most biochemical analysis is
 - EDTA
 - Heparin
 - Sodium fluoride
 - Toluene
- Which of the following panel of test constitute renal function test profile?
 - Bun, creat, potassium, sodium, chloride
 - Alp, creat, potassium, sodium, chloride
 - Cpk, creat, potassium, sodium, chloride

- D. Ast, fsh, proges, bun, creat
10. Lack of urine production is referred to as;
- A. Polyuria
 - B. Oliguria
 - C. Oligosuria
 - D. Anuria
11. A serum potassium of 5.6 mmol/l is of significance.
- A. Hypovolemia
 - B. Hypokalaemia
 - C. Hyperpotassaemia
 - D. Hyponatraemia
12. Which of the following statement is untrue of dehydration?
- A. Sweating and the output of urine both increase
 - B. Results when the output of water exceeds intake
 - C. Stimulates the thirst mechanism, instigating water consumption
 - D. Is a deficit of body water
13. Chronic renal failure is permanently managed through
- A. Use of cyclosporine
 - B. Haemodialysis
 - C. Peritoneal dialysis
 - D. Kidney transplantation
14. In quantitative analysis, total protein represents;
- A. Albumin and lipoprotein
 - B. Globulin and albumin
 - C. Micro protein and immunoglobulins
 - D. Glycoprotein and albumin
15. One of the following reasons explain why body fluids are electrolytes MUST be studied together.
- A. Exist in equal proportions in the body compartments
 - B. Electrolytes are dissolved in the body fluids
 - C. Electrolytes control the body fluids Ph
 - D. Body fluids enable proper filtration of the electrolytes
16. Which of the following statement describes hyperkalaemia
- A. High levels of chloride
 - B. Low level of chloride
 - C. Elevated levels of potassium
 - D. Elevated levels of sodium
17. Which of the following pair of hormones are involved in carbohydrate metabolism?
- A. Insulin and glucagon
 - B. Oxytocin and antidiuretic hormone
 - C. LH and FSH
 - D. Progesterone and estradiol
18. Given a laboratory report of total protein of 90g/l and albumin of 45g/l, what is the globulin concentration?
- A. 45g/l
 - B. 5g/l
 - C. 135g/l
 - D. 0.2g/l

19. In relation to sex, men have a higher normal creatinine than women due to the fact that;
- A. Men have a greater muscle mass than females
 - B. Men have bigger kidneys than women
 - C. Women are shorter than men
 - D. Men kidney is more efficient than female's
20. Which of the following test is NOT part of renal function test profile?
- A. Blood urea nitrogen
 - B. Creatinine
 - C. Amylase
 - D. Potassium

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

- a) Describe the diurnal variation of testosterone in a fertile male. (5 marks)
- b) Describe the mode of action of EDTA. (5 marks)
- c) Explain why CSF is referred to as the most precious specimen in the laboratory. (5 marks)
- d) List five features found on a laboratory request form. (5 marks)
- e) Describe liver function tests profile. (5 marks)
- f) Describe the consequences of gestational diabetes mellitus. (5 marks)

SECTION B: LONG ANSWER QUESTIONS (20 MARKS)

Discuss male reproductive disorders and the related clinical chemistry diagnostic tests. (20 marks)