

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN  
BIOMEDICAL SCIENCE AND TECHNOLOGY**

**BMET 424: CLINICAL PATHOLOGY**

**STREAMS:**

**TIME:2 HOURS**

**DAY/DATE: THURSDAY 13/04/2023**

**2.30 P.M. –4.30 P.M.**

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**INSTRUCTIONS**

**Answer question one and any other two question**

**QUESTION 1 (30 MARKS)**

- a) Plasma and serum are blood components commonly used for diagnosis in a clinical pathology laboratory
- Briefly describe the difference between Plasma and Serum (2 marks)
  - Explain the advantages and disadvantages of serum over plasma and vice versa in clinical diagnosis (4 marks)
- b) Highlight SIX rules to be followed in sample collection and use of urine test strip. (6 marks)
- c) A 28-year-old man requested cholesterol testing because his father had died of a myocardial infraction in his thirties, his paternal grandfather had developed angina in his early forties and died suddenly in his late forties, presumably of an infraction, and there was a further history. The GP noted that he of ischemic heart disease at a young age in his more extended family had tendon xanthomas on his knuckles and on his Achilles tendons. He took plenty of exercise, followed a healthy diet and was not overweight, did not smoke and was normotensive.
- Explain the history and interpretation of the following results. (5 marks)

- d) Explain FIVE major reasons for requesting biochemical tests. (5 marks)
- e) Explain the procedure used in the clinical diagnosis of acute hepatitis B. (4 marks)
- f) Identify 4 protein of major diagnostic interest in Myocardial Infraction. (4 marks)

**QUESTION 2 (20 MARKS)**

- a) Discuss the Kidney Function Tests done to evaluate glomerular filtration ability. (10 marks)
- b) Discuss different White Blood Cell Indices and their application in clinical diagnostic of acute hepatitis B. (10 marks)

**QUESTION 3 (20 MARKS)**

- a) Describe 10 most frequent parameters measured with Test Strips (10 marks)
- b) Discuss 4 biochemical tests for diagnosis of myocardial infarction and ischaemia (10 marks)

**QUESTION 4 (20 MARKS)**

- a) Plasma (cholesterol) is affected by both within-individual and between-individual factors. However, these tend to be long-term effects. Explain FIVE factors that contribute to variations in plasma concentrations within and between individuals (10 marks)
  - b) Describe various laboratory assays for diagnosis of specific liver diseases. (10 marks)
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