



**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND MEDICAL LABORATORY
SCIENCES**

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE

NSLS102: CLINICAL CHEMISTRY I

END OF FIRST SEMESTER FINAL EXAMINATIONS

NOV 2021

LECTURER: MR G. MALUNGA

19 NOVEMBER 2021

DURATION: 5 HOURS

INSTRUCTIONS

1. Write your candidate number on your answer sheets.
2. Answer any **One** question of your choice.
3. Each full question carries 100 marks
4. Submit your answer scripts as PDF documents.
5. Use the following specifications in your answer scripts:
Font: Times New Roman
Font size: 12
Line spacing: 2.0
6. Credit will be given for logical, systematic and neat presentations.

Answer any ONE question

Question 1

Explain in detail how the following methods can be applied in the measurement of different serum or urine analytes in a clinical chemistry laboratory. Illustrate your answer with named examples.

- a)** Electrophoresis [25]
- b)** Turbidimetry [25]
- c)** Atomic Absorption Spectrophotometry [25]
- d)** Potentiometry [25]

Question 2

Give a detailed analysis of the following biochemical pathways that are involved in carbohydrate metabolism.

- a)** Glycolysis [40]
- b)** The Electron transport chain [30]
- c)** The Pentose Phosphate Pathway [30]

Question 3

When red blood cells are broken down in the reticuloendothelial system, the haem component is converted into bilirubin which is then excreted since it is toxic.

- a)** Describe in detail, the metabolism and excretion of bilirubin [60]
- b)** Explain the significance of laboratory measurement of direct and indirect bilirubin [40]

THE END