*"Investing in Africa's Future"*

# COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

## DEPARTMENT OF HEALTH SCIENCES

## BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

### NSLS101: LABORATORY PRINCIPLES PRACTICAL

### END OF FIRST SEMESTER EXAMINATIONS

### NOVEMBER 2024

### LECTURER: DR MAIBOUGE SALISSOU

### DURATION: 3 HOURS

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***INSTRUCTIONS***

1. Answer **all** questions in both sections A, B and C on separate answer sheets provided.
2. Mark allocation for each question is indicated at the end of the question.
3. Credit will be given for logical, systematic and neat presentations.

**SECTION A: SPOT EXAM [40 MARKS]**

There are 10 stations which have been set up in the laboratory numbered 1 to 10. For each station (a) Name the item/s shown **(20 marks)**
(b) State it's/their use in the laboratory **(20 marks)**

**SECTION B [40 MARKS]**

**Question 1**

You are provided with Sodium Chloride granules, 3.5% Sodium Hypochlorite solution and absolute ethanol. Use these provided chemicals to prepare the following solutions. Fully describe the method of preparation of each solution showing all the calculations, masses and volumes used. Label your solutions clearly showing your candidate number and the name of the solution. Submit the prepared solutions for marking.

**(a)** 70 ml of physiologic saline [10]
**(b)** 300ml of 1% Sodium hypochlorite solution using 3.5% Sodium hypochlorite solution [10]
**(c)** 200 ml of 80% ethanol [10]
**(d)** State one laboratory use of each of the solutions which you have prepared [5]
**(e)** Describe how a micropipette can be maintained in good working condition [5]

**SECTION C (20 Marks)**

**Question 1**

The following table shows blood glucose levels of a patient with chronic kidney disease measured on consecutive days during one week.

Table 1: Blood glucose levels of a diabetic patient

| Day | [Glucose]mmol/l |
|---|---|
| Monday | 15.6 |
| Tuesday | 14.7 |
| Wednesday | 14.9 |
| Thursday | 13.4 |
| Friday | 14.7 |
| Saturday | 15.6 |
| Sunday | 16.3 |

(a). Calculate the mean Glucose concentration for the patient during the one week period. [10]

(b). Calculate the standard deviation. [10]