REPUBLIC OF RWANDA

EASTRERN PROVINCE

RWAMAGANA DISTRICT

ADVENCED LEVEL DISTRICT COMPREHENSIVE

ASSESSMENT FOR THE SECOND TERM,2023-2024.

SUBJECT: ALTERNATIVE TO PHYSICS PRACTICAL

LEVEL: SENIOR FOUR (S4)

COMBINATIONS:

PHYSICS-CHEMISTRY-MATHEMATICS (PCM)

MATHEMATICS- PHYSICS- COMPUTER SCIENCE (MPC)

PHYSICS –CHEMISTRY- BIOLOGY (PCB)

MATHEMATICS –PHYSICS- GEOGRAPHY (MPG)

ASSOCIATED NURSING PROGRAM (ANP)

/20MARKS

DURATION: 1 HOUR 30 MINUTES

INSTRUCTIONS:

1) Do not open this question paper until you are told to do so.

2) This paper consists of compulsory question comprising sub-questions**.**
(20marks)

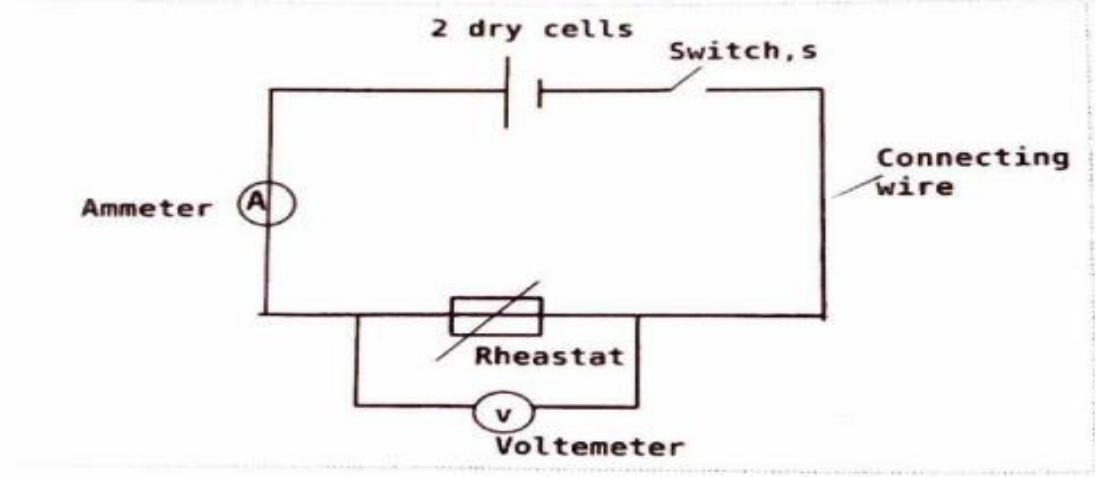
3) You need a pencil, blue or black pen, a 30cm ruler and a calculator

In this experiment you will verify Ohm's law

Materials used:

- 2Dry cells
- Ammeter
- Voltmeter
- Rheostat
- Switch
- Connecting wires
- Crocodile clips

Set up



Procedures used:

1. Connect the circuit as shown above
2. Close the switch, S and adjust the Rheostat so that the reading I on the ammeter is 0.20A
3. Read and record the voltmeter reading, U.
4. Open the switch, S.
5. Repeat procedures (3) to (4) with I= 0.4, 0.6, 0.8, 1.0, and 1.2A

A student carried out this experiment and got the following data as shown in table below;

Current I/A	Voltage, U/V
0.2	1.6
0.4	3.2
0.6	4.8
0.8	6.4
1.0	8.0
1.2	9.6

Questions to guide interpretation of results.

1. State Ohm's law. **(2marks)**

2.Plot a graph of U (on vertical axis) against I (on horizontal axis). **(10marks)**

3.Find the gradient/slope of the graph. **(4marks)**

4. What is the unit of the gradient/slope? **(1mark)**

5. What does the gradient/slope represent? **(2marks)**

6. Prove that the readings were or not subjected to a random error. **(1mark)**

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