LAB 18: RESISTIVITY

AIM: To determine the resistance per unit length, ***p***, of a wire

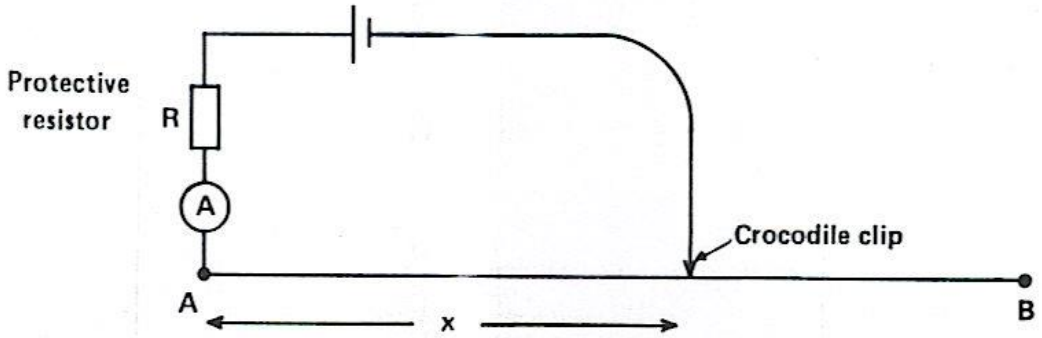
APPARATUS & MATERIALS:

metre rule resistor

crocodile clip connecting wires

ammeter batteries

voltmeter



METHOD:

- Set up the circuit in the diagram above.
- Record the current, **I**, flowing in the circuit for different values of ***x***.
- Measure the e.m.f., **E**, of the cell using the voltmeter provided

THEORY:

- Define the resistivity of a substance.
- State the factors that affect the resistivity of a substance.
- State the formula and units.

RESULTS:

- Tabulate these pairs of values along with the corresponding values of **1/I**
- Record and tabulate all results in table below (showing all headings and units)

Distance (x) /(m)	**Current (I) / (A)**	**1/Current (1/I) / (A^{-1})**

- Plot the graph of **1/I** against ***x.***

CALCULATIONS:

- Calculate the slope **S** of the graph, showing clearly how you obtained your answer.
- Using the equation $\boldsymbol{p = S \times E}$, find the resistance per unit length of the wire **AB**.

CONCLUSION:

- State the resistance per unit length of the wire