

You are provided with a Source of power 3V, Rheostat, Ammeter, Resistor, Voltmeter, Key and connecting wires. Proceed as follows:
Set the apparatus as shown in Figure 2.

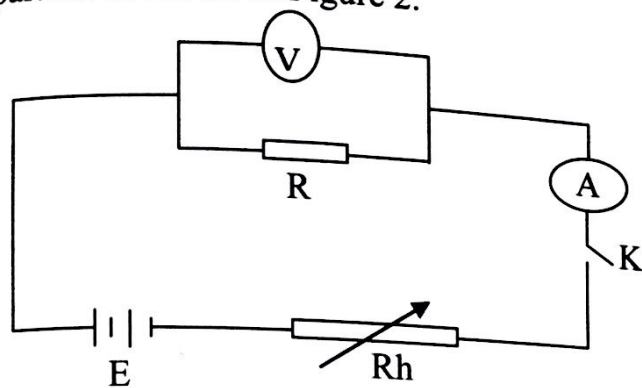


Figure 2

- (a) Name the special symbols used in the circuit in Figure 2.
- (b)
 - (i) Close the switch and adjust the R_h by sliding slowly from one end.
 - (ii) Read and record the values of V and I .
 - (iii) Repeat the experiment by changing the position of slider on R_h for four (4) different positions and tabulate your results.
- (c)
 - (i) Plot a graph of V against I .
 - (ii) What is the shape of your graph?
 - (iii) Determine the slope of your graph.
 - (iv) What is the physical meaning of the slope obtained in 2 (c) (iii)?
 - (v) From the graph, determine the value of p.d. when the current is 0.25A.
 - (vi) What is the relationship between V and I across R ?
 - (vii) Why is this experiment not an accurate method of calculating resistance?
 - (viii) State the law governing this experiment.
- (d) What is the aim of this experiment?
- (e) State one source of error and how to minimize it.

(25 marks)