

- (b) Connect the dry cell, 2Ω resistor and the voltmeter as shown in Figure 2.

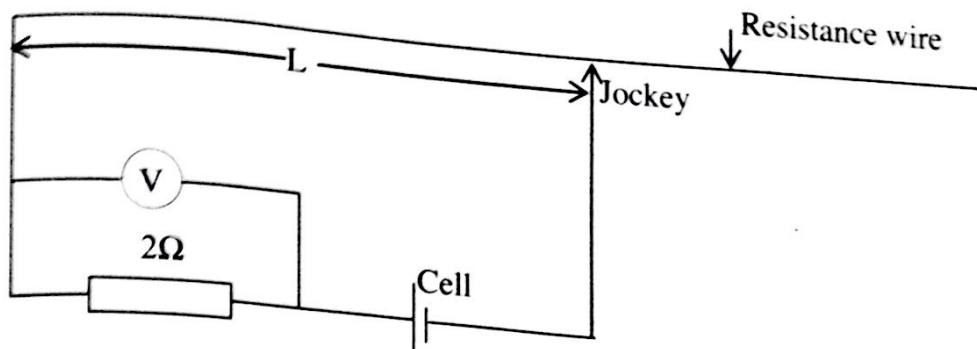


Figure 2

- (c) Place the jockey on the bare wire such that L is equal to 20cm. Record the voltmeter reading V.
- (d) Repeat procedure (c) above for values of L equal to 30cm, 40cm, 50cm and 60cm respectively.
- (e) Record the values of L, V and $\frac{1}{V}$ in a suitable table.
- (f) Plot a graph of $\frac{1}{V}$ against L.
- (g) Find the slope, s, of the graph.
- (h) Find n which is the value of $\frac{1}{V}$ when L = 0.
- (i) Calculate the E.M.F of the dry cell from $E_s = 0.015(\text{cm}^{-1})$.
- (j) Using the relation $r = 2(\Omega) \times n \times (E-1)$, calculate the internal resistance r of the dry cell.
- (k) State three sources of errors and three precautions to be taken in this experiment.

(25 marks)