



مدرسة جيه اس اس الخاصة
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Name: Nidhi Subject: Phy Reg. No.:

Date:

Q1. $q = 1C$

$$e^- = 1.6 \times 10^{-19}$$

$$q = ne$$
$$\therefore n = \frac{q}{e} = \frac{1}{1.6 \times 10^{-19}} = \frac{1}{1.6 \times \frac{1}{10^{19}}} = \frac{10^{19}}{1.6 \times 1.6} = \frac{10^{19}}{0.625} = \frac{10}{16} \times 10^{19}$$
$$= 0.625 \times 10^{19} = \underline{\underline{6.25 \times 10^{18}}}$$

Q2. The factors on which the resistance of a conductor depends are:

1. Length: Resistance is directly proportional to the length, therefore if the length increases, ~~area~~ resistance also increases.
2. Area of cross-section: Resistance and area are inversely proportional.
3. Material of the conductor.

Q3. If the potential difference between 2 ends of the component is halved, then the former value of current will also be halved. According to ~~Ohm's~~ Ohm's Law: $V = IR$
 \therefore we can say that voltage (potential difference) is directly proportional to current. Therefore, if the potential difference is halved then the current is also halved.

Q5. $V = 6V$

$$Q = 1C$$

* we need to find energy = Work done

$$V = \frac{W}{q}$$

$$\therefore 6 = \frac{W}{1}$$

$$W = 6 \times 1$$

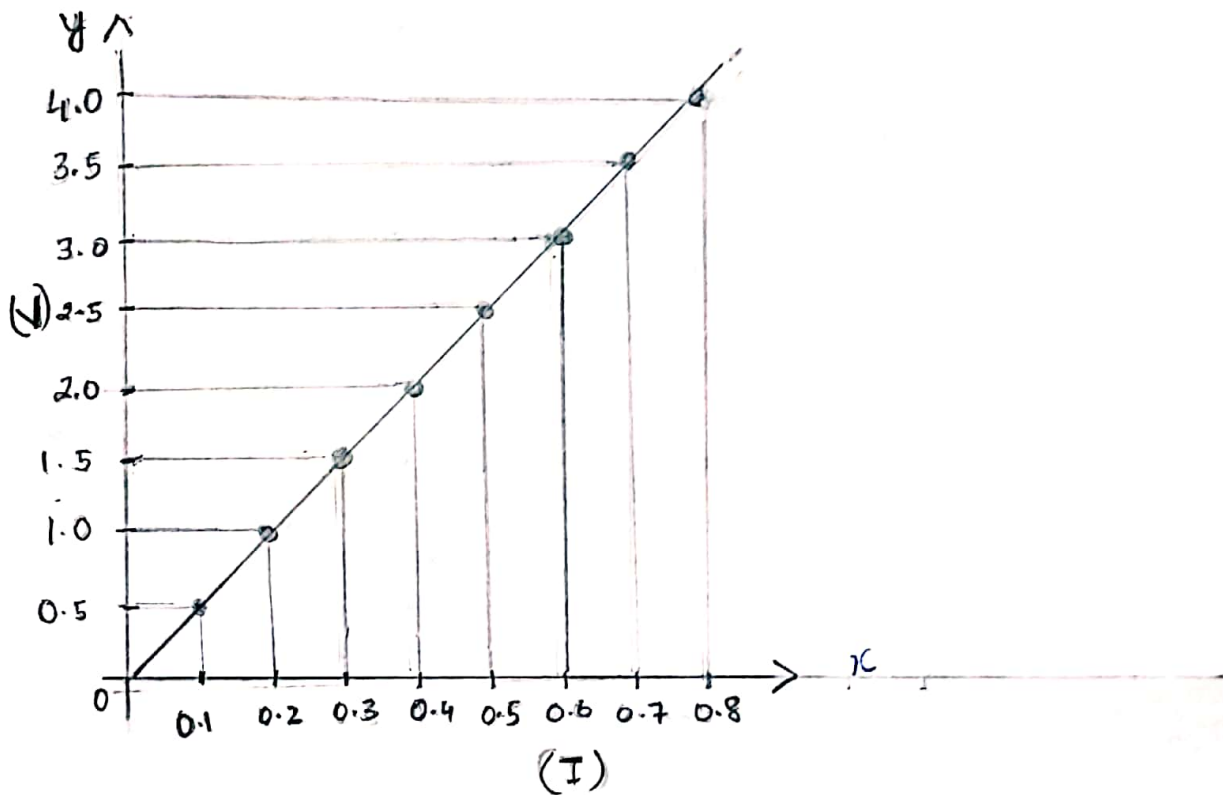
$\therefore W = 6J \rightarrow 6J$ is the energy required for 1c

Q40A

Scale:

x axis = 1cm = 0.1 units

y axis = 1cm = 0.5 units



Resistance = slope of graph

$$= \frac{y_2 - y_1}{x_2 - x_1}$$

$$(x_1, y_1) = (0.1, 0.5)$$

$$(x_2, y_2) = (0.8, 4.0)$$

$$\therefore \text{slope} = \frac{0.8 - 0.1}{4.0 - 0.5} = \frac{0.7}{3.5} = \underline{\underline{0.5 \Omega m}}$$

\therefore the resistance = 0.5 Ωm

$$\begin{array}{r} 34.010 \\ - 0.5 \\ \hline 33.5 \\ 0.8 \\ - 0.1 \\ \hline 0.7 \end{array}$$