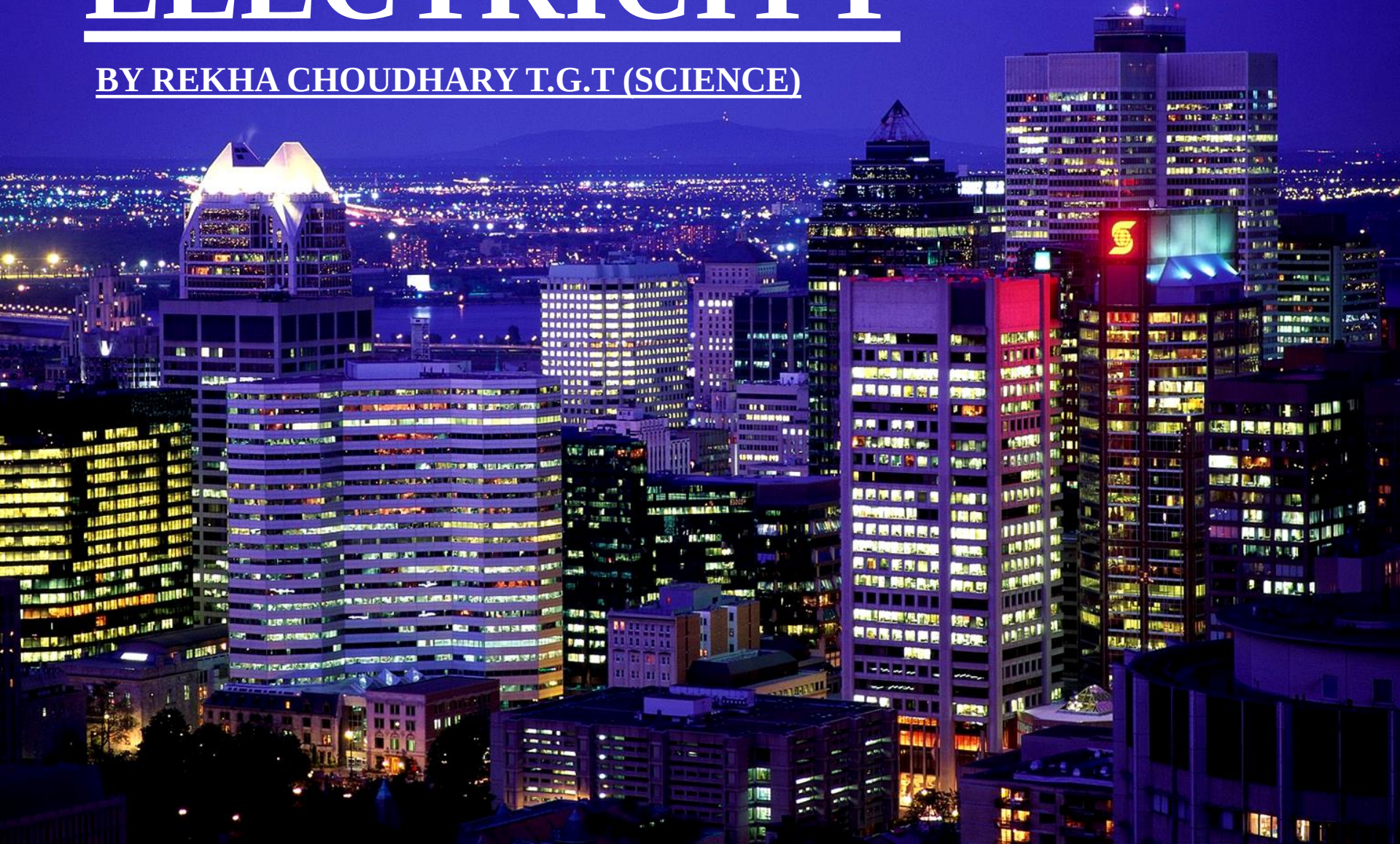


ELECTRICITY

BY REKHA CHOUDHARY T.G.T (SCIENCE)



Ohm's law :-

Ohms law is a relationship between the potential difference across a conductor and the current flowing through it.

Ohm's law states that :-

'The current flowing through a conductor is directly proportional to the potential difference between its ends provided its temperature remains constant.'

$$I \propto V$$

$$\text{or } V \propto I$$

$$\text{or } V = I R$$

$$V = R$$

$$I$$

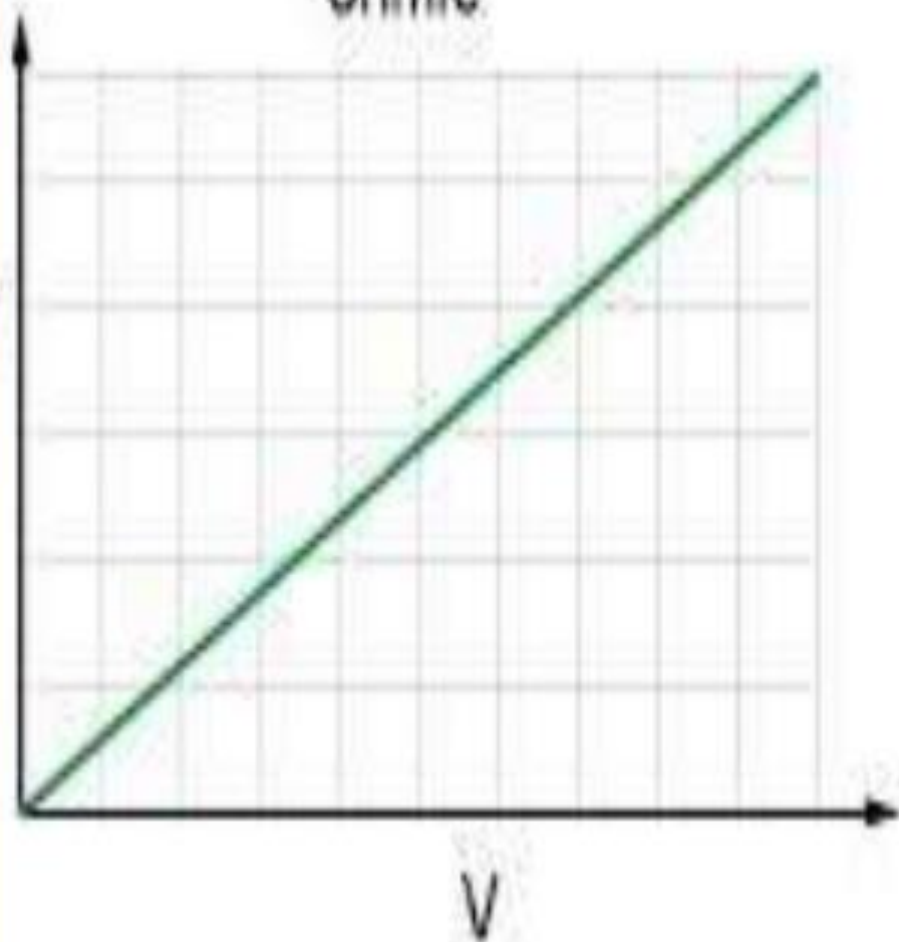
Where R is a constant called resistance for a given metallic wire at a given temperature.



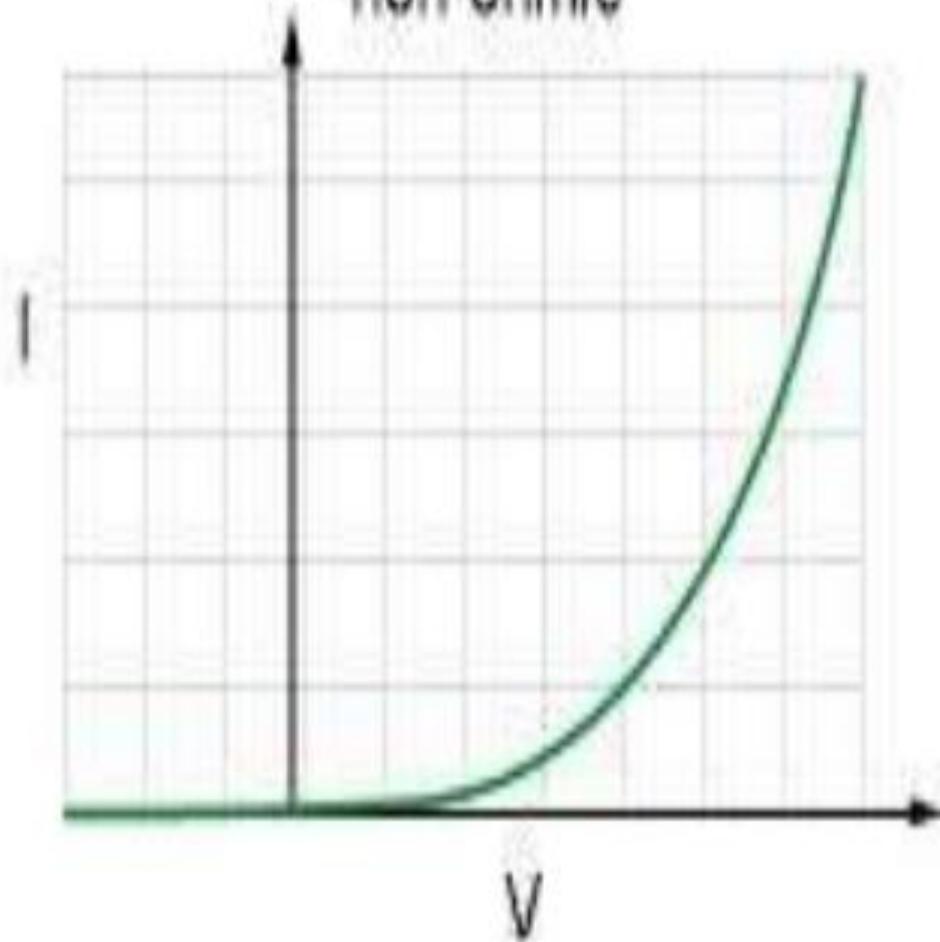
I-V Graphs for Conductors



ohmic



non-ohmic



□ This graph shows that the current flowing through a conductor is directly proportional to the potential difference across its ends.
The slope indicates the Resistance.

□ According to Ohm's law $R = \frac{V}{I}$

The SI unit of resistance is ohm (Ω).

□ If the potential difference across the two ends of a wire is 1 V and the current flowing through it is 1 A then the resistance R of the conductor is 1 ohm (1Ω).

•A 240 V lamp draws a current of 0.50 A from the mains supply. What is the resistance of the lamp?

480 Ω

•What current flows through a 12 V lamp when its filament has a resistance of 100 Ω ? Give your answer in amps and milliamps.

0.12 A or 120 mA

•A current of 4.0 mA flows through a fine piece of resistance wire when the potential difference across it is 8.0 V. What is the resistance of the wire?

2000 Ω or 2.0 k Ω

THANK
YOU