

VIDYA BHAVAN, BALIKA VIDYAPEETH  
SHAKTI UTTAN ASHRAM, LAKHISARAI, PIN- 811311

**SUBJECT-** PHYSICS

**CLASS** -10<sup>th</sup> (All Sections)

**DATE:-**04/04/XX

**SUBJECT TEACHER- MR. NEEL NIRANJAN**

**STUDY MATERIALS & ASSIGNMENT**

**Topics Name:-**

- Ohm's law
- Resistance of a conductor
- Factors on which resistance of a conductor depends

**OHM'S LAW**

- The conductor through which an electric current passes is directly proportional to the potential difference across its two ends.
- **V is proportional to I**
- **$V=IR$**
- Where,  
V= voltage or potential difference across its two ends  
I= Electric current  
R= Resistance across its two ends.

**RESISTANCE**

- It is the measure of conductor to resist an electric current.
- It is denoted by 'R'.
- Its SI unit is ohm.

**FACTORS ON WHICH AN ELECTRIC CURRENT DEPENDS**

- An electric current is directly proportional on the length of conductor.
- An electric current is inversely proportional on the cross sectional area.
- An electric current is directly proportional on the temperature.
- An electric current is dependent on the nature of material through which wire is made.  
It means, if the nature of material is good then resistance will be less & vice-versa.

**ASSIGNMENT**

1. What is ohm's law?
2. Which constant is used to remove the proportional sign in an ohm's law?
3. What is the resistance of a conductor ? what is its SI unit?
4. On what factors an electric current depends?