



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade

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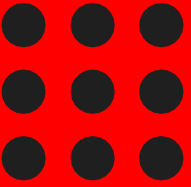
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

**COURSE NAME : 19EE01 BASIC ELECTRICAL AND ELECTRONICS
ENGINEERING**

I YEAR /II SEMESTER COMPUTER SCIENCE & DESIGN

Unit 1 – Electrical Circuits and Measurements

Topic 2 : Introduction to Electrical parameters





FEEL THE ELECTRICITY

How it looks?

Any answers?

What color it is?

How do you know about Electricity?

How it smells?

How do you feel if Electricity passes on u?

How it weighs?

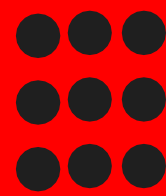
How bigger is that?

How it is taste?

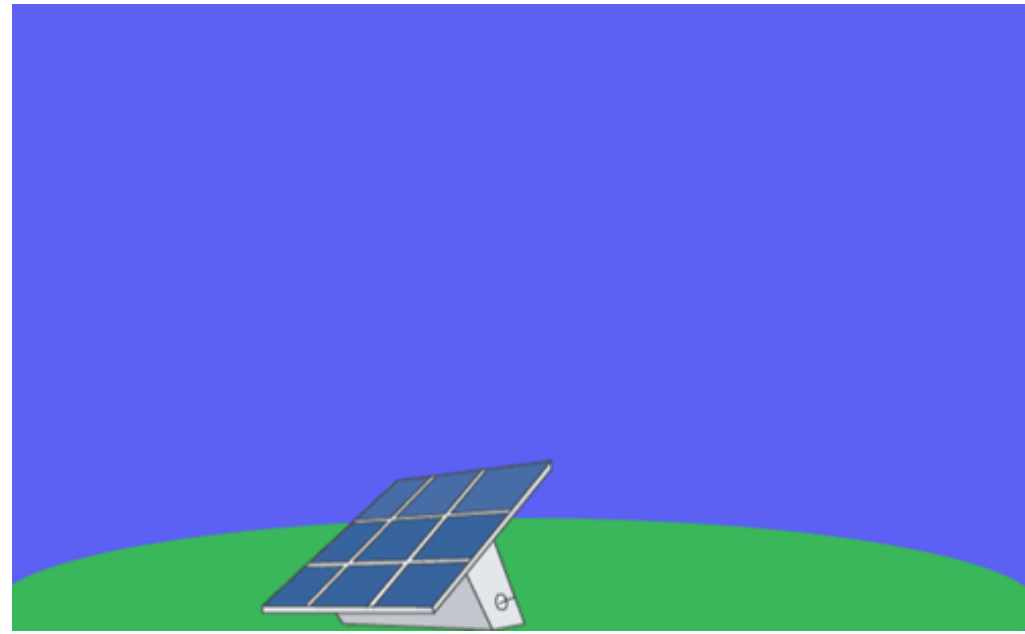
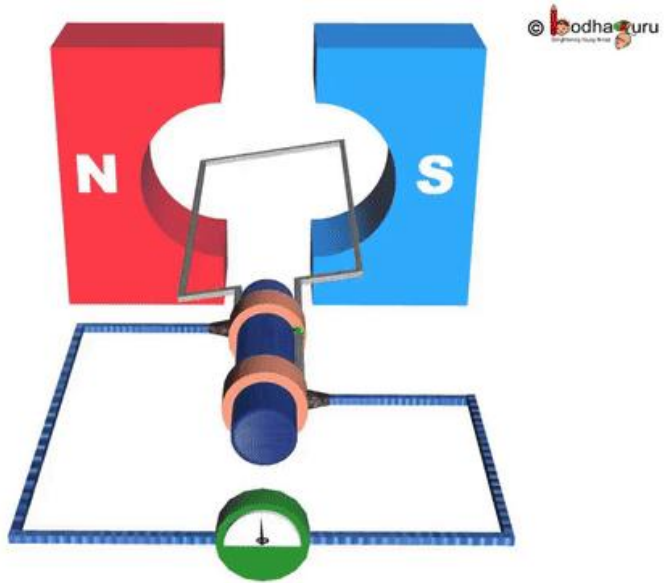




HOW DOES ELECTRICITY PRODUCED?



FARADAY'S LAW OF ELECTROMAGNETIC INDUCTION



SOLAR PV-CELL

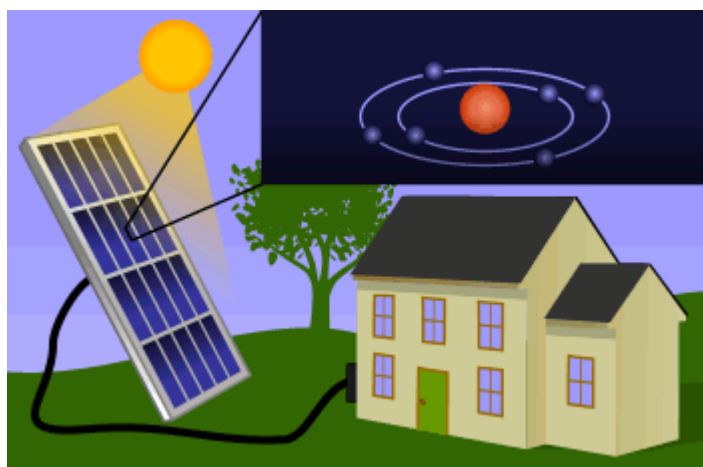
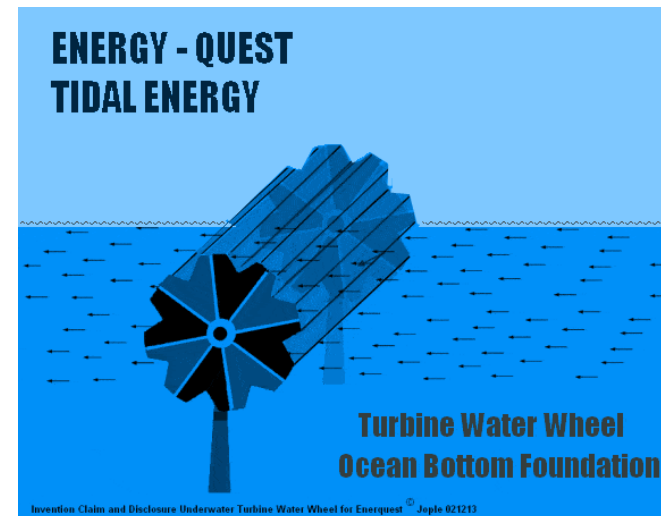


GENERATOR



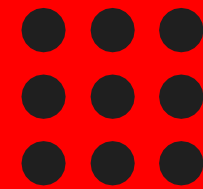


ELECTRICITY GENERATION METHODS

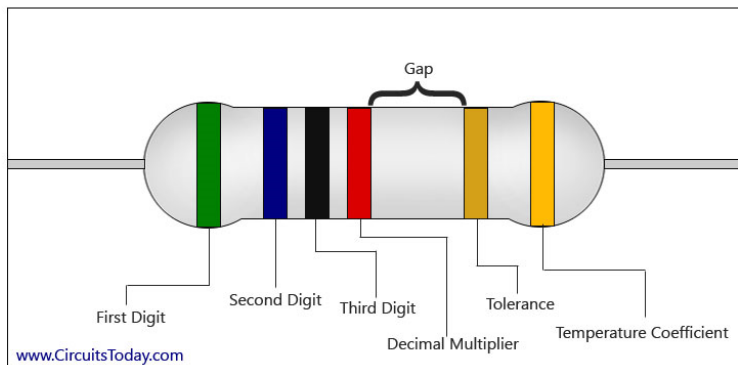




ELECTRICAL PARAMETERS & QUANTITIES



Resistance Color Code



UNITS?



VOLTAGE





ELECTRICITY PARAMETERS

Current (I)-It is a flow of electrons in the line. It passes only in the closed path. Unit of the current is Ampere .

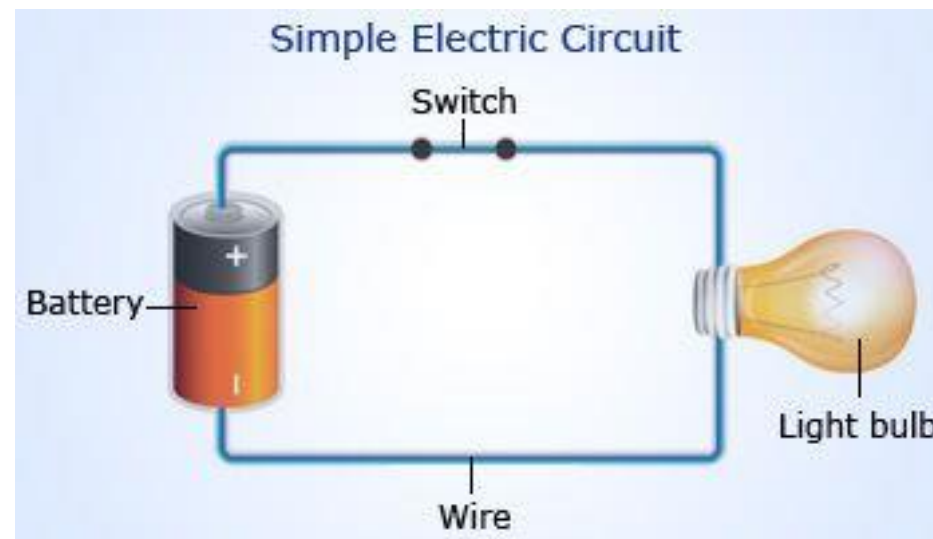
For example Current =2 Ampere

Voltage (V)- It is the potential difference between two ends. Unit of the Voltage is Volts .

For example Voltage $V= 20$ Volts

Resistance (R)- It is the property to oppose the flow of current. Unit of the Resistance is Ohms .

For example Resistance $R=20$ Ohms

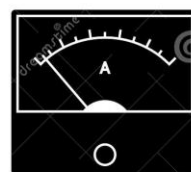




MODERN TECHNOLOGIES



Before this era?



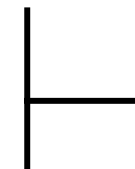


ELECTRICAL SYMBOLS

battery



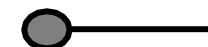
junction



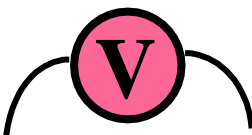
wiring



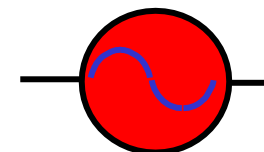
**Node/
Terminal**



voltmeter



**AC
generator**



ammeter



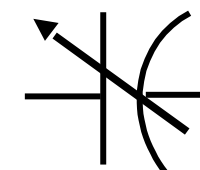
**Variable
resistance**



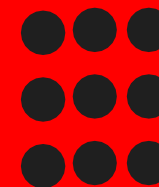
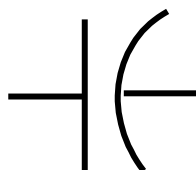
resistance



**Variable
capacitor**

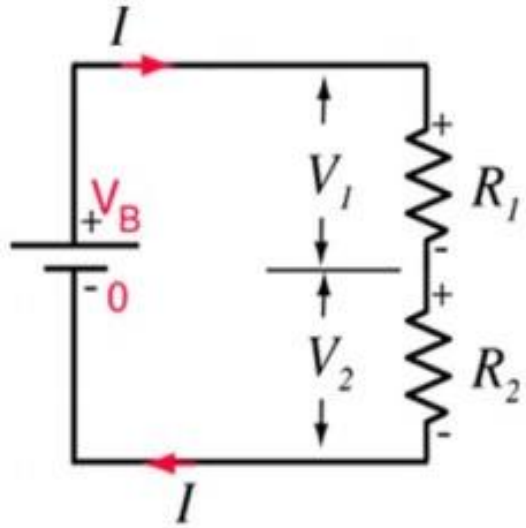


capacitor



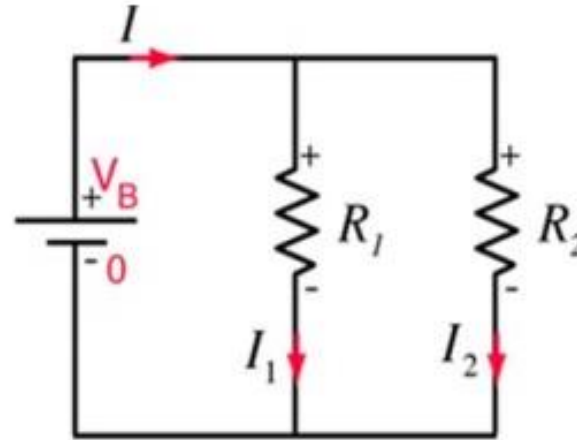


SAMPLE CIRCUIT



Series resistors

$$R_{equivalent} = R_1 + R_2$$



Parallel resistors

$$\frac{1}{R_{equivalent}} = \frac{1}{R_1} + \frac{1}{R_2}$$



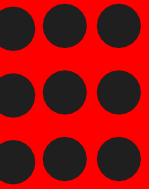
OHM'S LAW

Ohm's law states that The current that flows through most conductors is directly proportional to the voltage applied to it provided all physical conditions and temperature remain constant. Also, inversely proportional to the resistance in the conductor

Ohm's Law

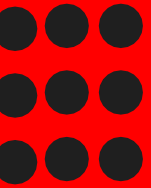
$$I = \frac{V}{R}$$

Electric current = Voltage / Resistance





ASSESSMENT



My battery is 300 Voltage, and have the resistance of 300 ohms. Determine the current flowing through the line.

Ohm's Law

$$I = \frac{V}{R}$$

Electric current = Voltage / Resistance

Current??





REFERENCES

1. Bhattacharya. S.K, “Basic Electrical and Electronics Engineering”, Pearson Education , (2017)
2. Muthu Subramanian R, Salivahanan S,“ Basic Electrical and Electronics Engineering”, Tata McGraw Hill Publishers, (2009)
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THANK YOU

