



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**COURSE NAME : 19EE101 BASIC ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**I YEAR /I SEMESTER AI&DS**

**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?

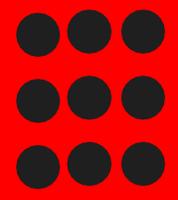
How bigger is that?

How it is taste?

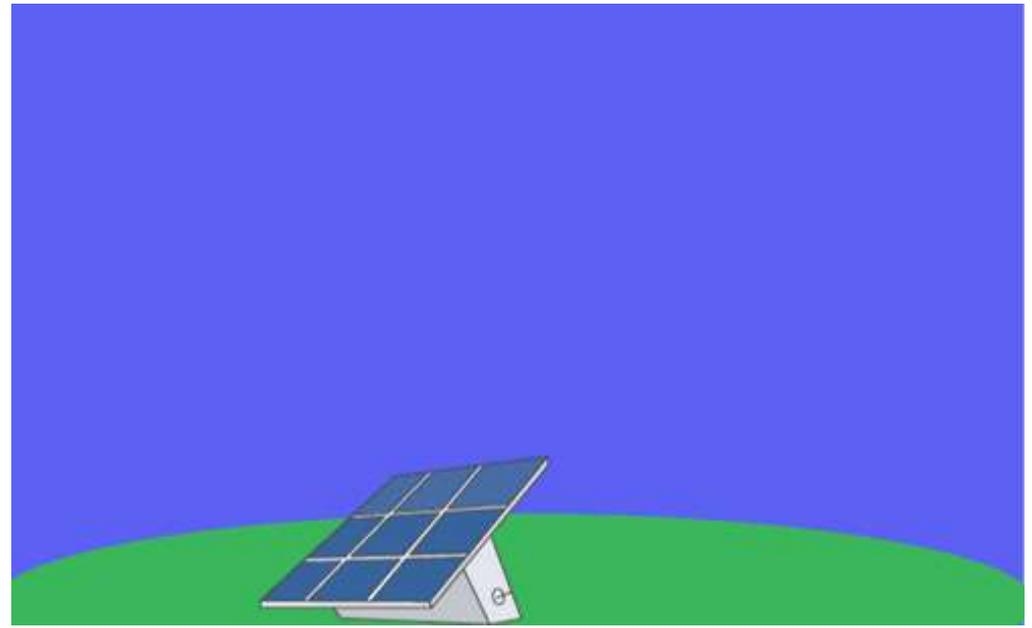
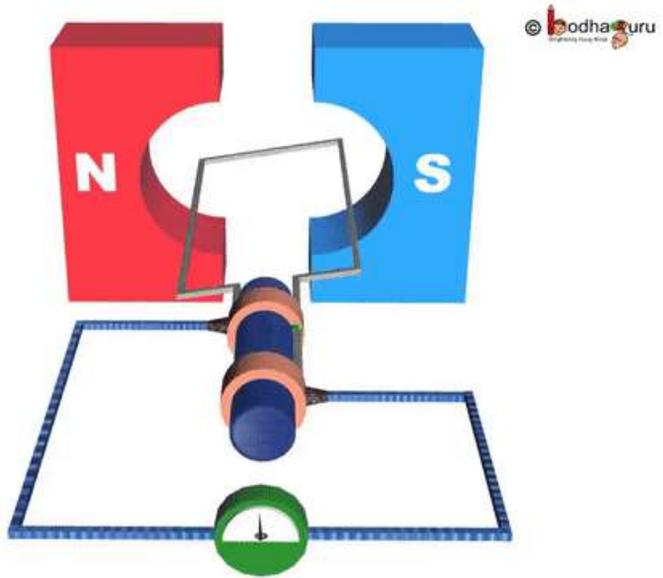




# HOW DOES ELECTRICITY PRODUCED?



## FARADAY'S LAW OF ELECTROMAGNETIC INDUCTION



SOLAR PV-CELL

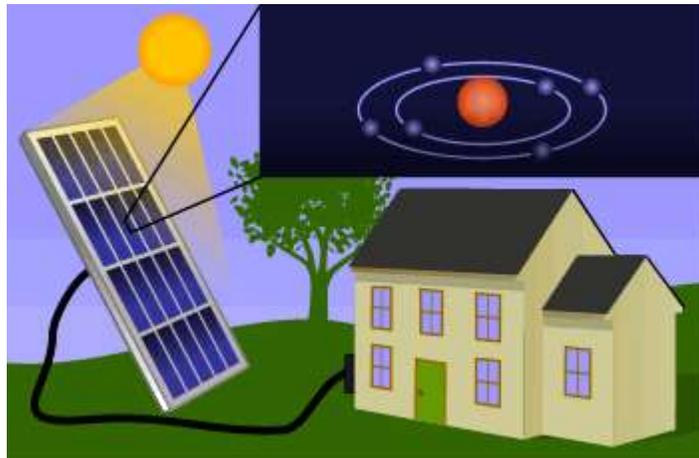
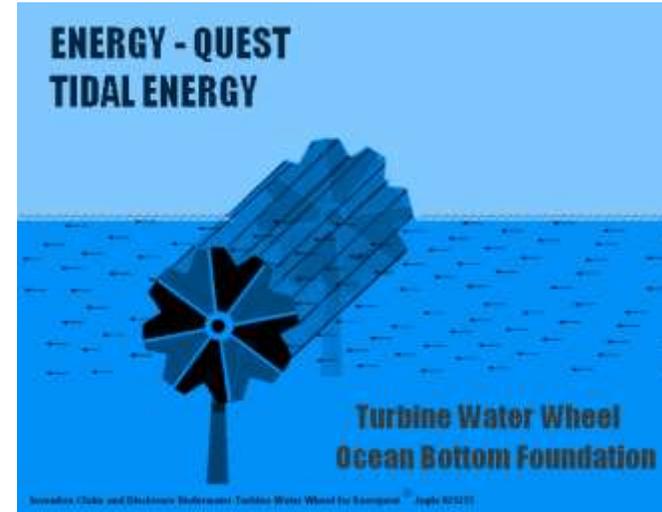


GENERATOR



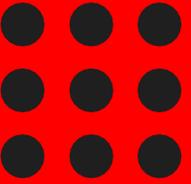


# ELECTRICITY GENERATION METHODS

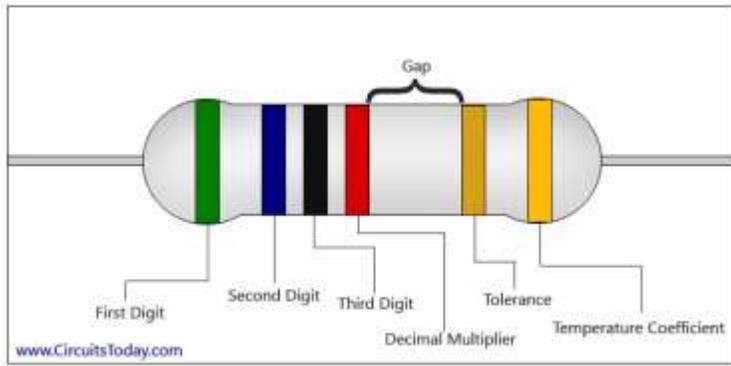




# ELECTRICAL PARAMETERS & QUANTITIES



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 .

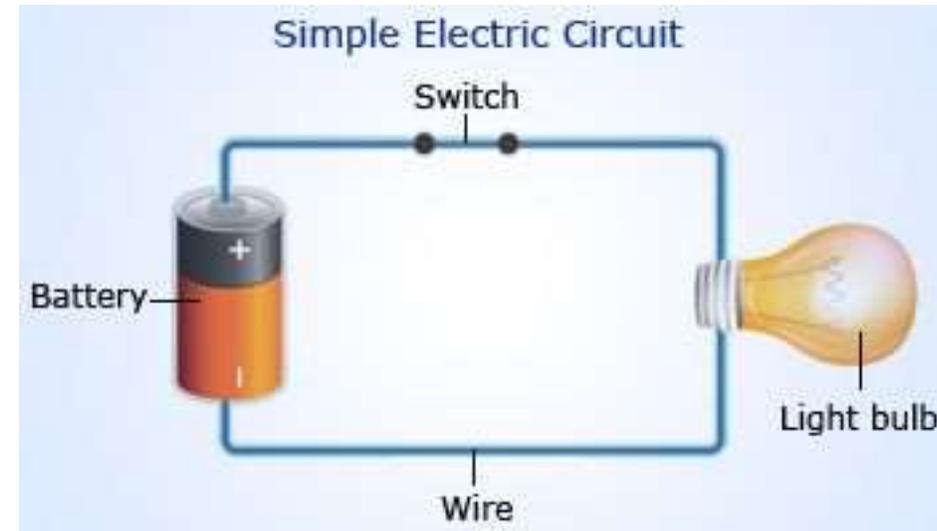
For example Current =2 Ampere

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

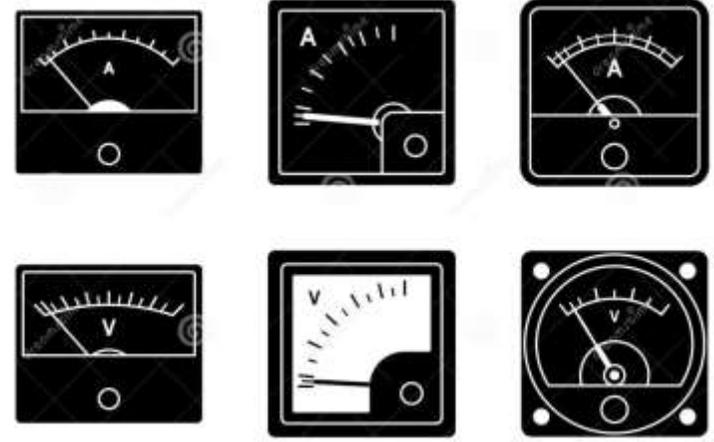




# MODERN TECHNOLOGIES



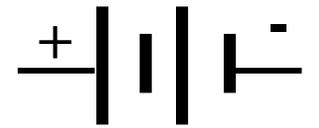
Before this era?



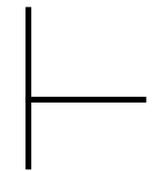


# ELECTRICAL SYMBOLS

**battery**



**junction**



**wiring**



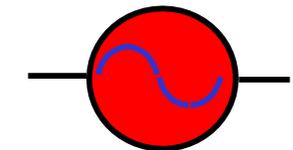
**Node/  
Terminal**



**voltmeter**



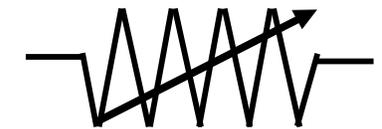
**AC  
generator**



**ammeter**



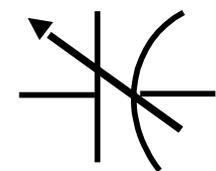
**Variable  
resistance**



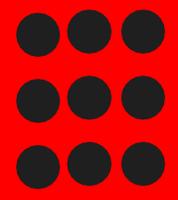
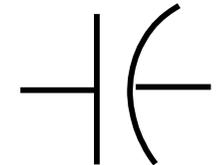
**resistance**



**Variable  
capacitor**

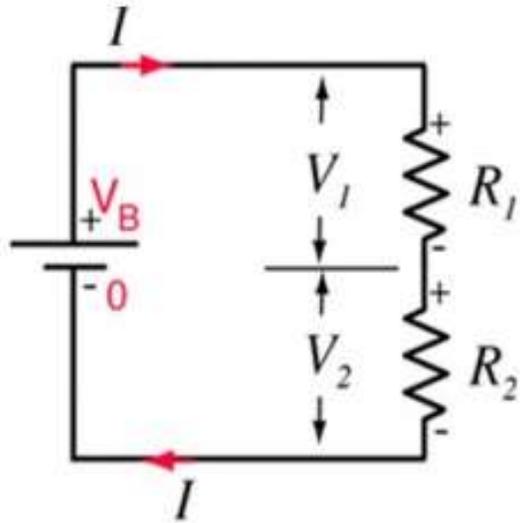


**capacitor**



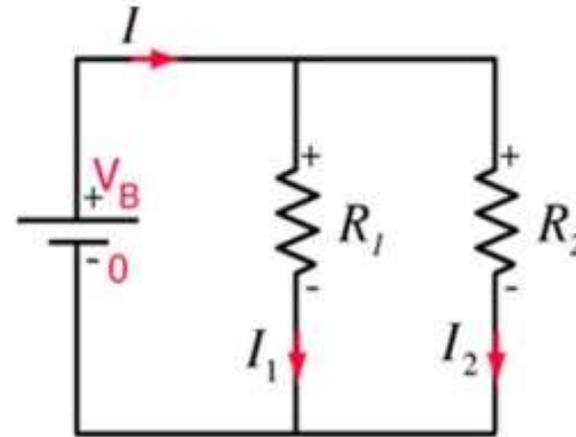


# SAMPLE CIRCUIT



Series resistors

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

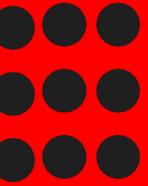


Parallel resistors

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



# 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

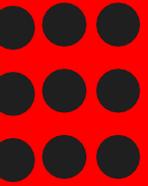
$$I = \frac{V}{R}$$

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)
3. V.Mittle“ Basic Electrical Engineering”, Tata McGraw Hill Publishers, (2017)
4. Nagrath. I.J, “Electronics: Analog and Digital”, Prentice Hall India Pvt. Ltd., (2013)

**THANK YOU**