



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

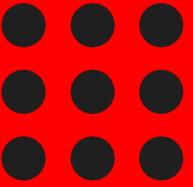
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME : 19EE201 CIRCUIT THEORY

I YEAR /II SEMESTER EEE

Unit 1 – Basic Circuit Analysis

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?

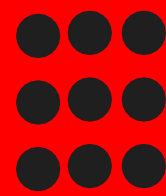
How bigger is that?

How it is taste?

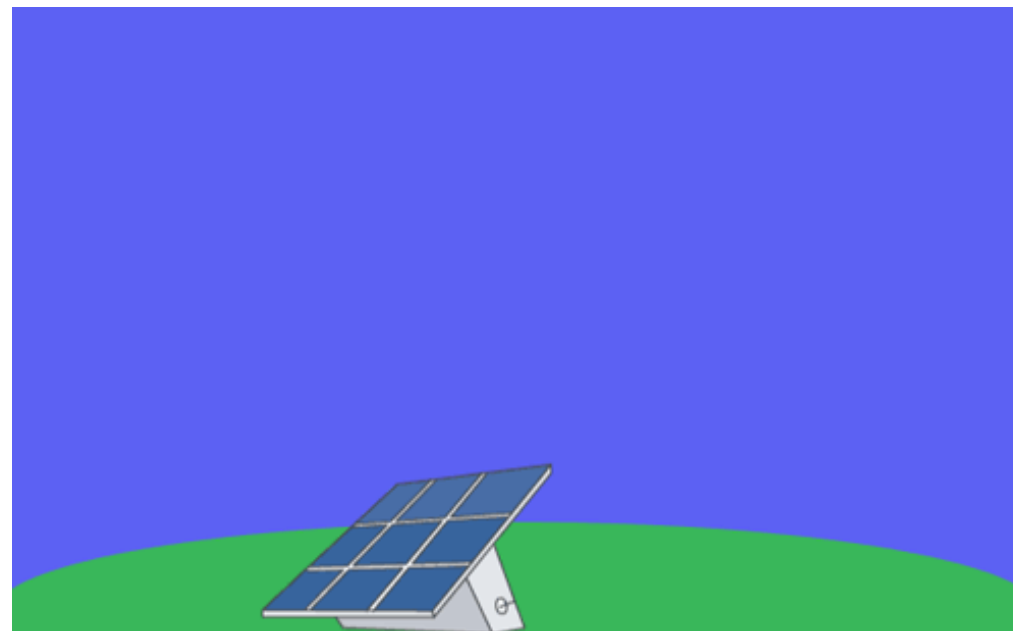
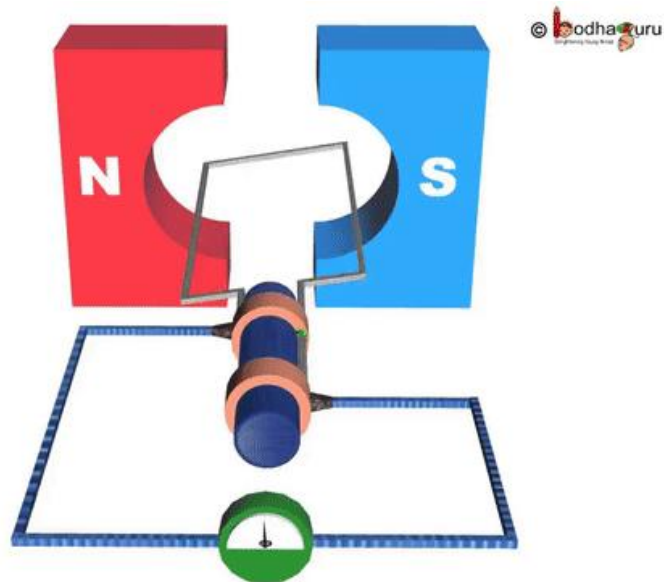




HOW DOES ELECTRICITY PRODUCED?



FARADAY'S LAW OF ELECTROMAGNETIC INDUCTION



SOLAR PV-CELL

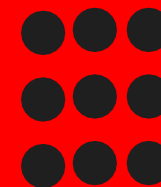
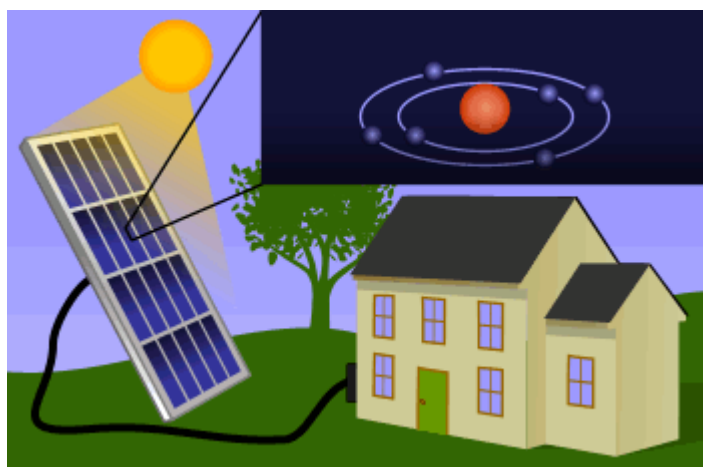
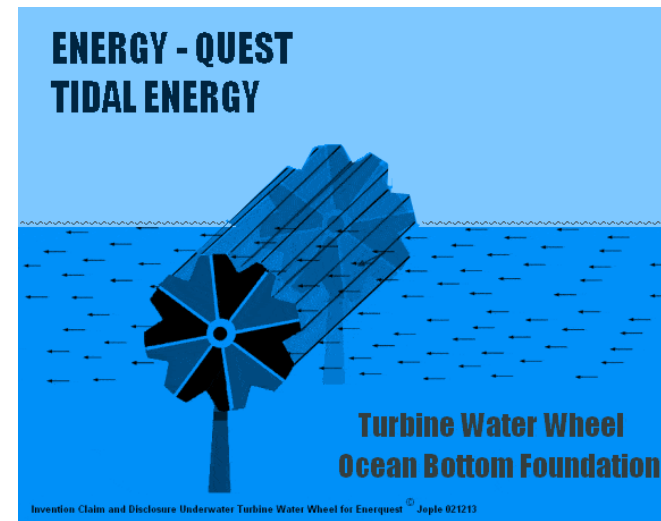


GENERATOR



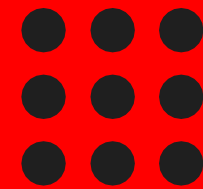


ELECTRICITY GENERATION METHODS

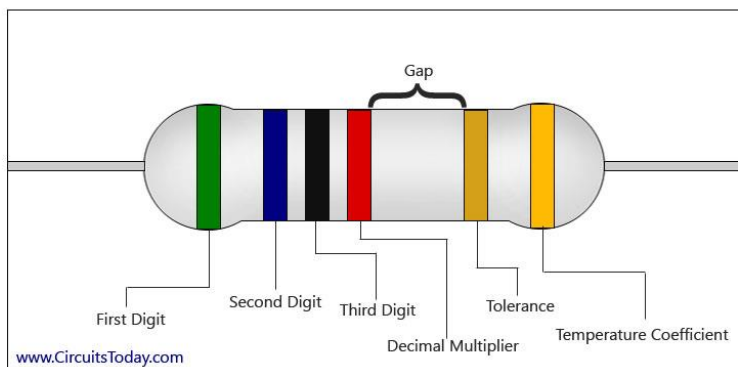




ELECTRICAL PARAMETERS & QUANTITIES



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 .

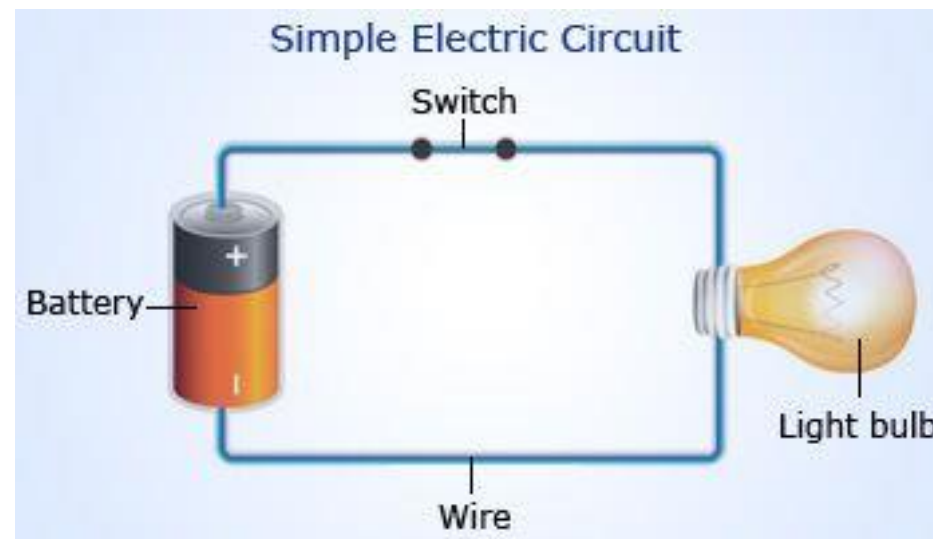
For example Current =2 Ampere

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 .

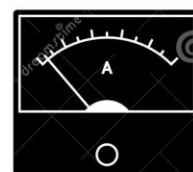
For example Resistance $R=20$ Ohms



MODERN TECHNOLOGIES



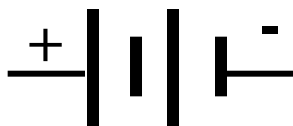
Before this era?



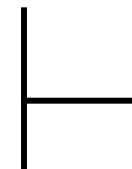


ELECTRICAL SYMBOLS

battery



junction



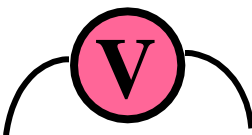
wiring



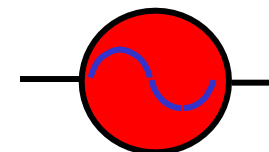
Node/
Terminal



voltmeter



AC
generator



ammeter



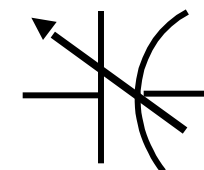
Variable
resistance



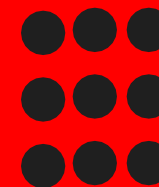
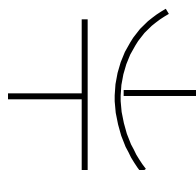
resistance



Variable
capacitor

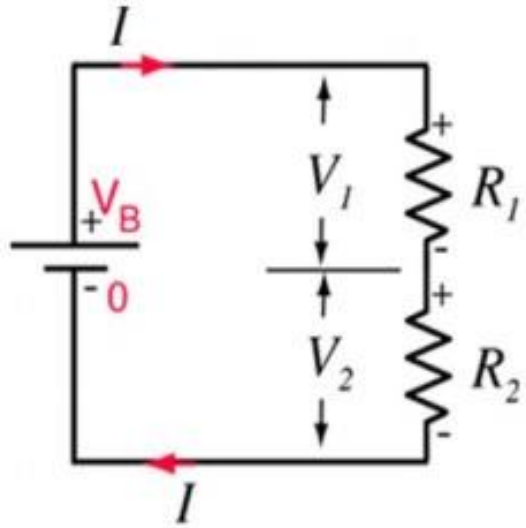


capacitor



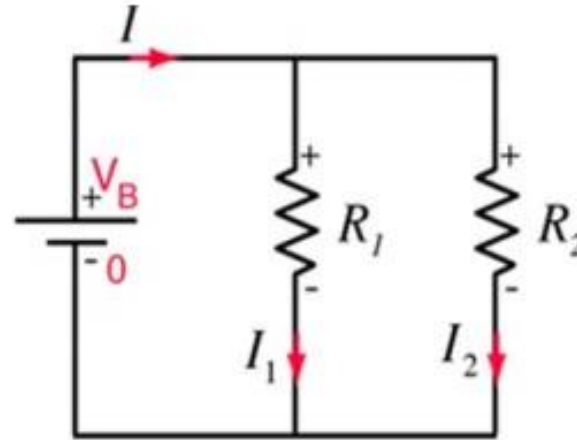


SAMPLE CIRCUIT



Series resistors

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



Parallel resistors

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



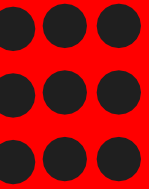
OHM'S LAW

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

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