



# **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 COMPUTER SCIENCE AND DESIGN**

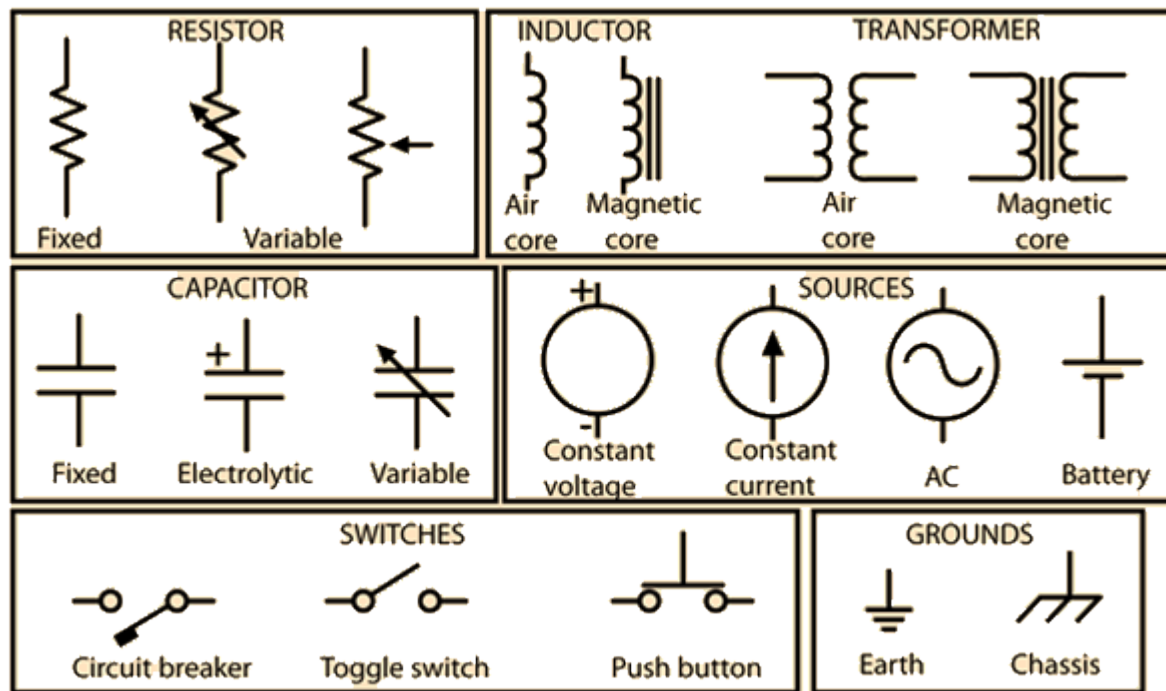
**COURSE NAME : 19EE01 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**

**I YEAR /II SEMESTER - COMPUTER SCIENCE AND DESIGN**

**Unit 1 – Electrical Circuits and Measurements**

**Topic 1 : INTRODUCTION TO COURSE AND ELECTRICAL PARAMETERS**

# UNIT-1 : ELECTRICAL CIRCUITS & MEASUREMENTS

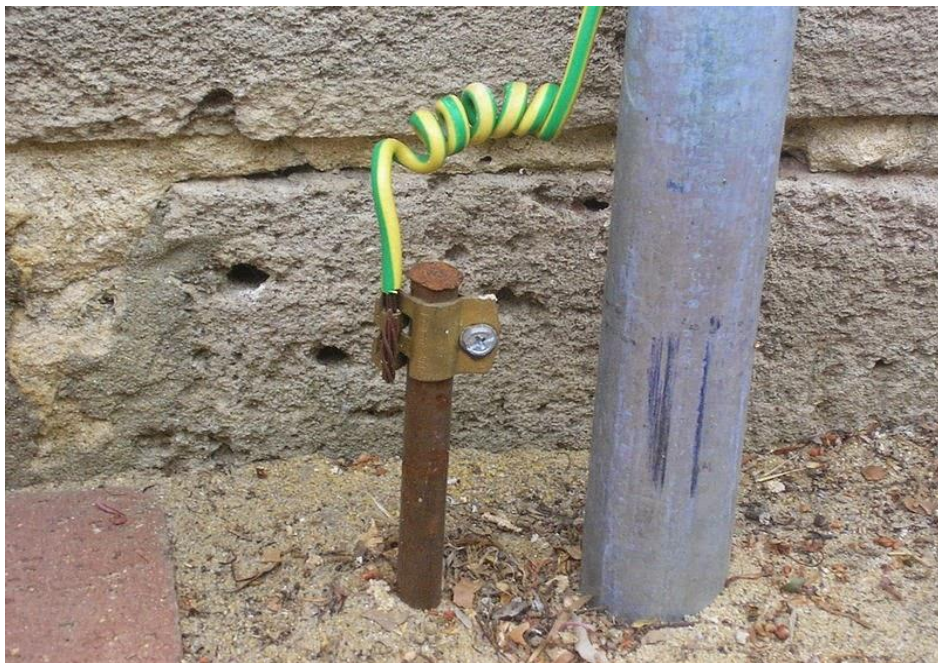




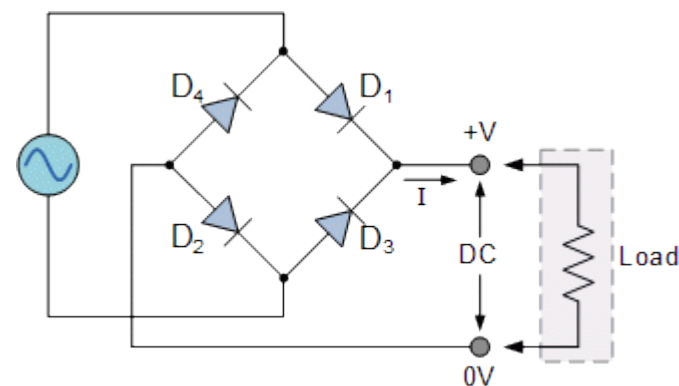
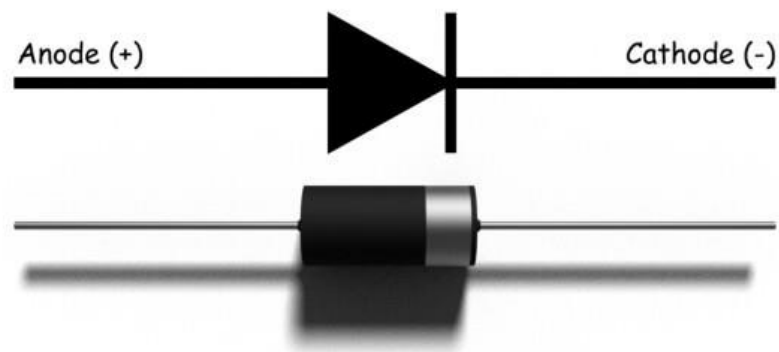
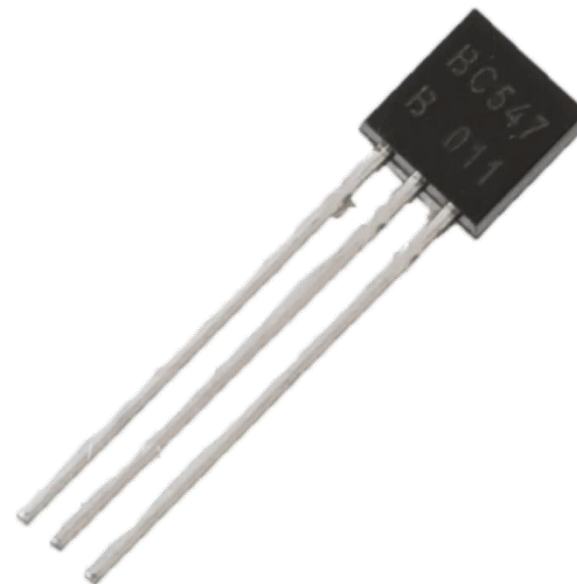
## UNIT-II ELECTRICAL MACHINES



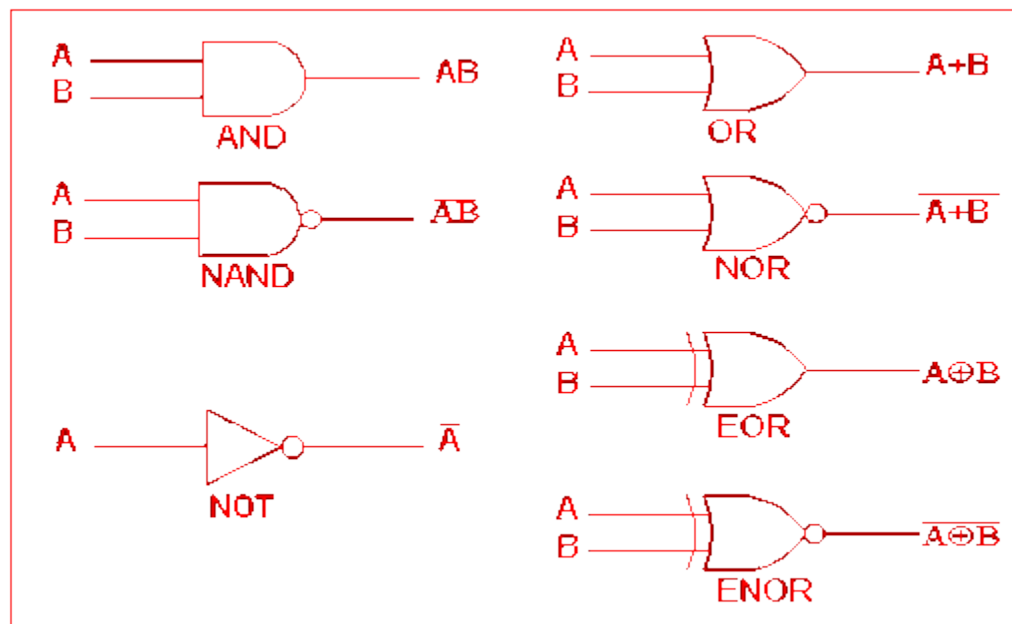
## UNIT-III WIRING, GROUNDING AND SAFETY



# UNIT-IV ANALOG ELECTRONICS



# UNIT-V LINEAR AND DIGITAL ELECTRONICS





# ESSENTIALS FOR THE LEARNING THE COURSE

1. Industrial Visit
2. Industrial Case study
3. Demo Model Creation
4. Industry Specific  
Question Paper
5. Top Contest  
Participation
6. PPT Preparation
7. Assessment
8. Feedback Mode
9. Seminar Presentation

# 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?

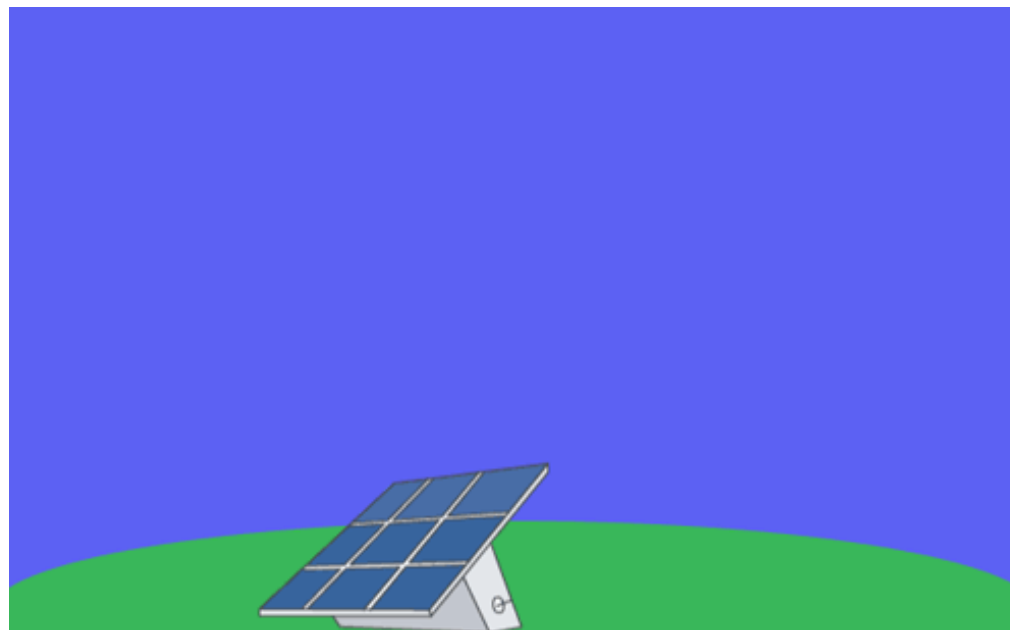
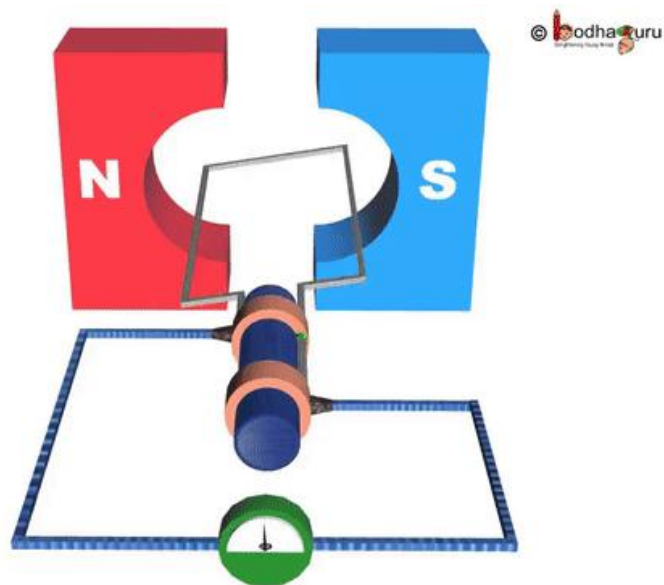
How bigger is that?

How it is taste?



# HOW DOES ELECTRICITY PRODUCED?

## FARADAY'S LAW OF ELECTROMAGNETIC INDUCTION

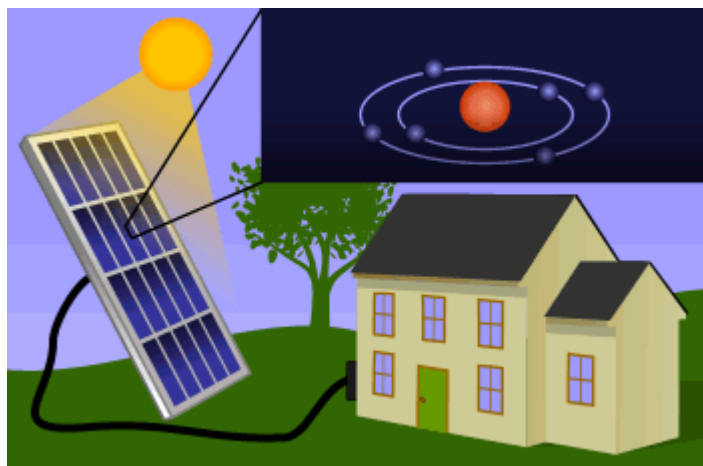
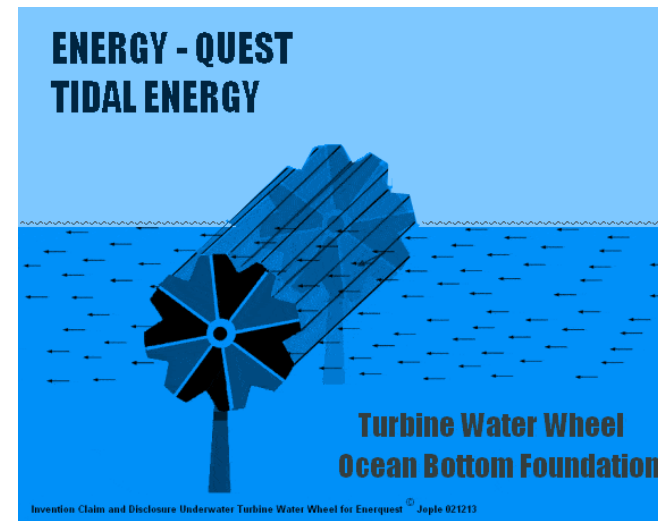


**SOLAR PV-CELL**



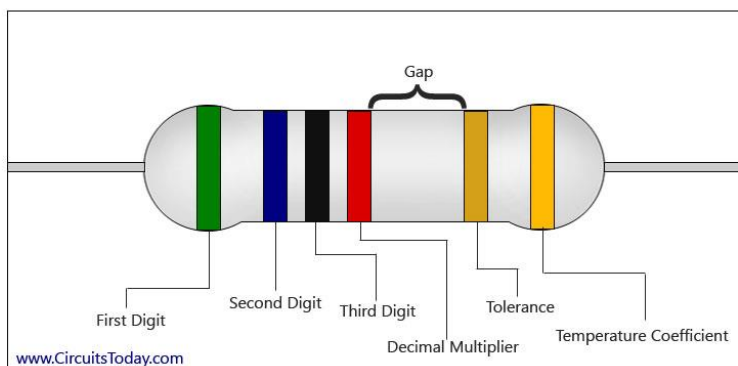
**GENERATOR**

# ELECTRICITY GENERATION METHODS



# ELECTRICAL PARAMETERS & QUANTITIES

Resistance Color Code



## 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 .

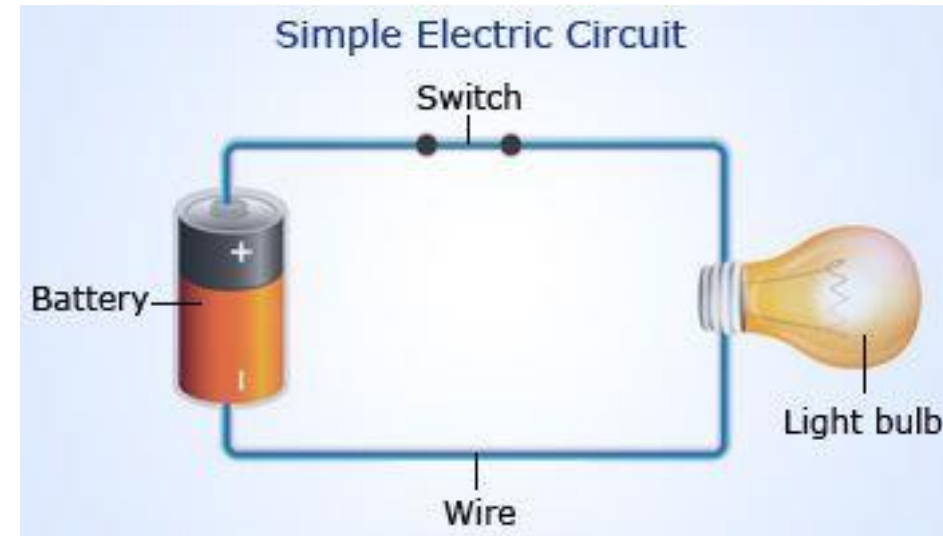
For example Current =2 Ampere

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 .

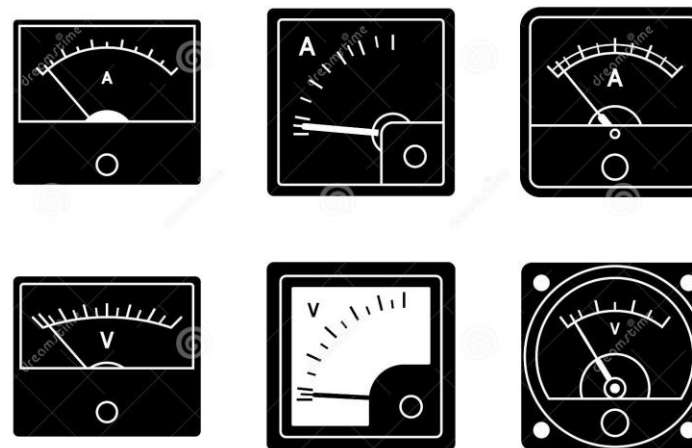
For example Resistance  $R = 20$  Ohms



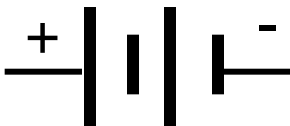
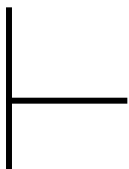
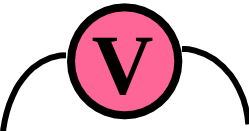
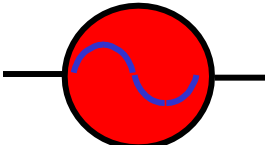
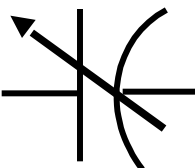
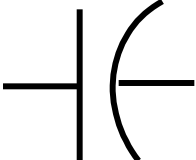
# MODERN TECHNOLOGIES



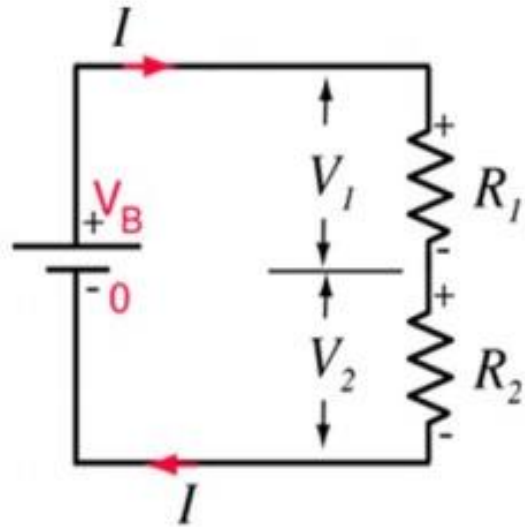
Before this era?



# ELECTRICAL SYMBOLS

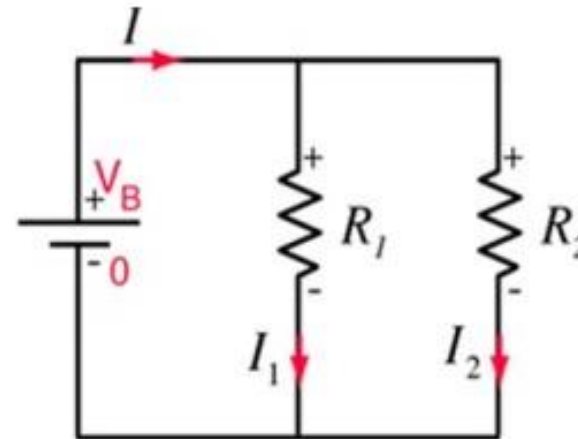
|            |                                                                                      |                        |                                                                                       |
|------------|--------------------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------------|
| battery    |    | junction               |    |
| wiring     |    | Node/<br>Terminal      |    |
| voltmeter  |    | AC<br>generator        |    |
| ammeter    |    | Variable<br>resistance |    |
| resistance |   | Variable<br>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