Basic Electrical and Electronics Engineering Lab

INTRODUCTION

Dr. Sonam Shrivastava/ Assistant Professor (Sr.) /SELECT

BEEE102P
Basic Electrical and Electronics Engineering Lab
List of Experiments

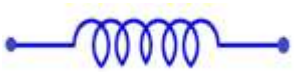
S.No	Experiment Title
	Cycle-1 Software Experiments
1	Verification of Mesh current analysis and node voltage analysis using ORCAD/Capture CIS
2	Verification of Thevenin's theorem using ORCAD/Capture CIS
3	Verification of Maximum power transfer theorem using ORCAD/Capture CIS
4	Verification of Resonance phenomenon in a series RLC circuit using ORCAD/Capture CIS using AC Parametric Sweep Analysis
5	Design of single-phase half-wave and full wave rectifier
	Cycle-II Hardware Experiments
6	Verification of Kirchhoff's current law/ Thevenins theorem
7	Wiring circuit for Single lamp and Fan with regulator/ Staircase wiring circuit layout of multi storage building
8	Design of half adder circuit using logic gates
9	Measurement of energy using single phase energy meter
10	Design of line and load regulation circuit using Zener diode

Electric Circuit

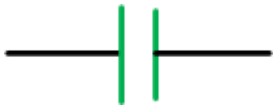
Basic (Electric) circuit elements:

- **Resistor** R

- **Inductor** L



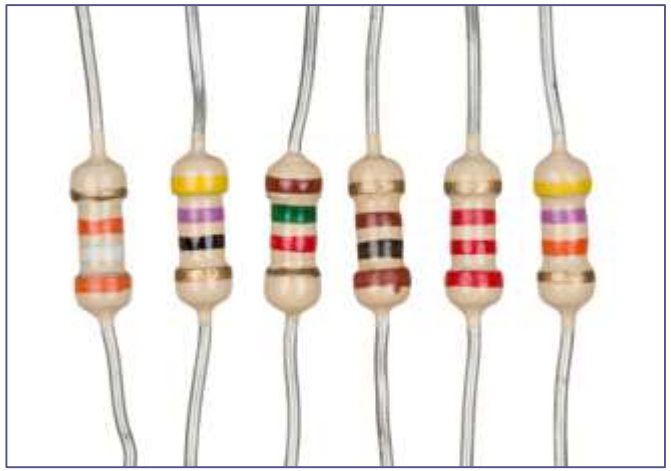
- **Capacitor** C

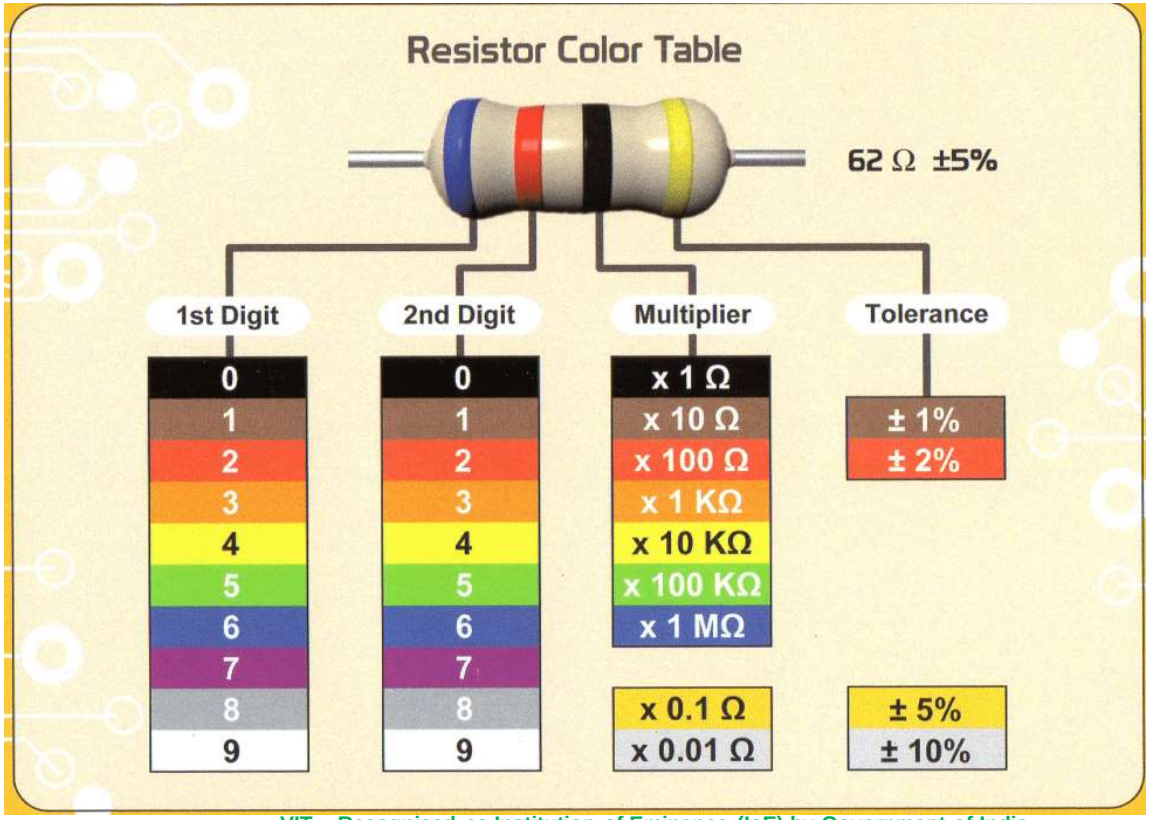


➢ Resistor

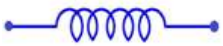
R

A resistor is a passive two-terminal electrical circuit component that is used to reduce current flow, adjust signal levels, to divide voltages etc., in a given circuit.

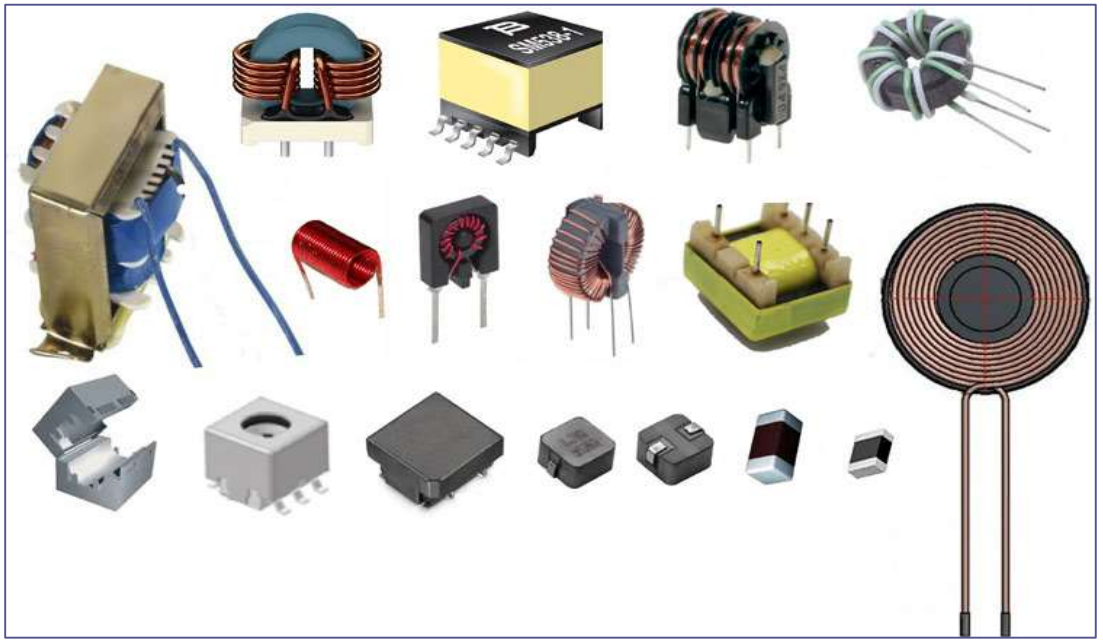




➢ Inductor L

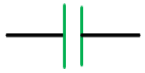


An **inductor**, also called a coil, choke, or reactor, is a passive two-terminal electrical component that stores energy in a magnetic field when electric current flows through it. An **inductor** typically consists of an insulated wire wound into a coil around a core.

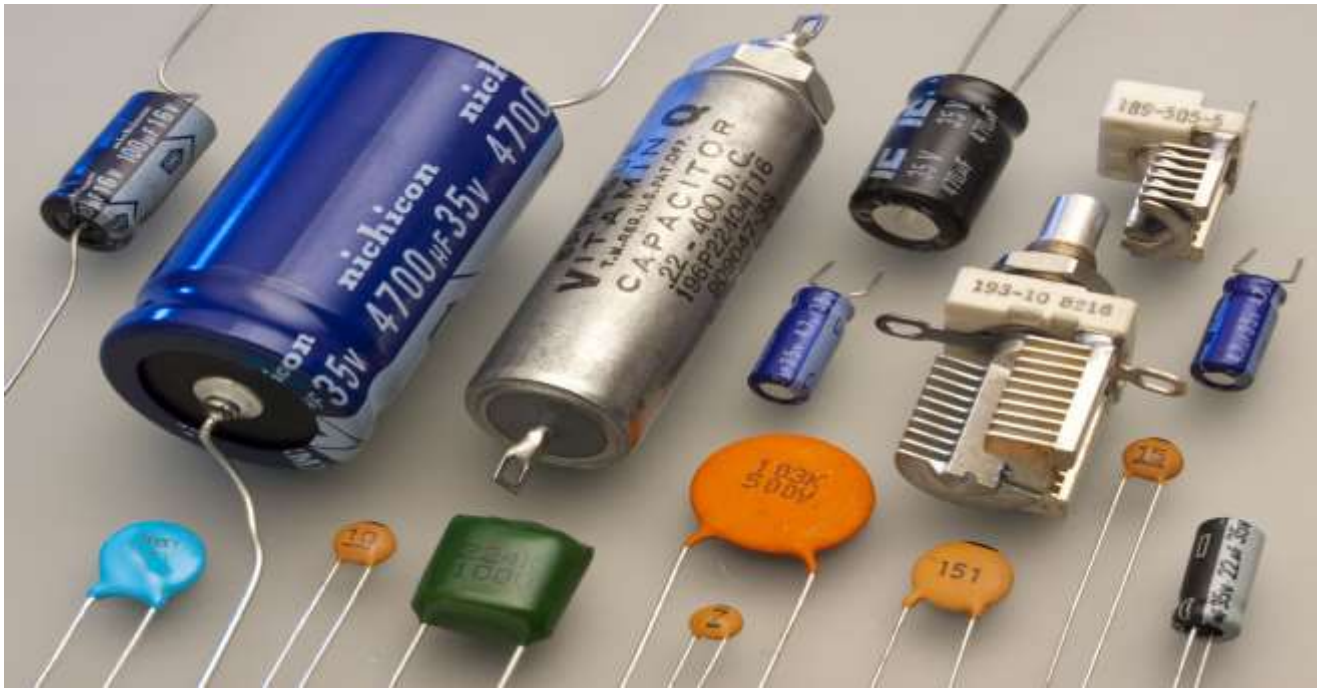


➢ Capacitor

C



A **capacitor** is a device that stores electrical energy in an electric field. It is a passive circuit component with two terminals. The effect of a capacitor is known as capacitance.

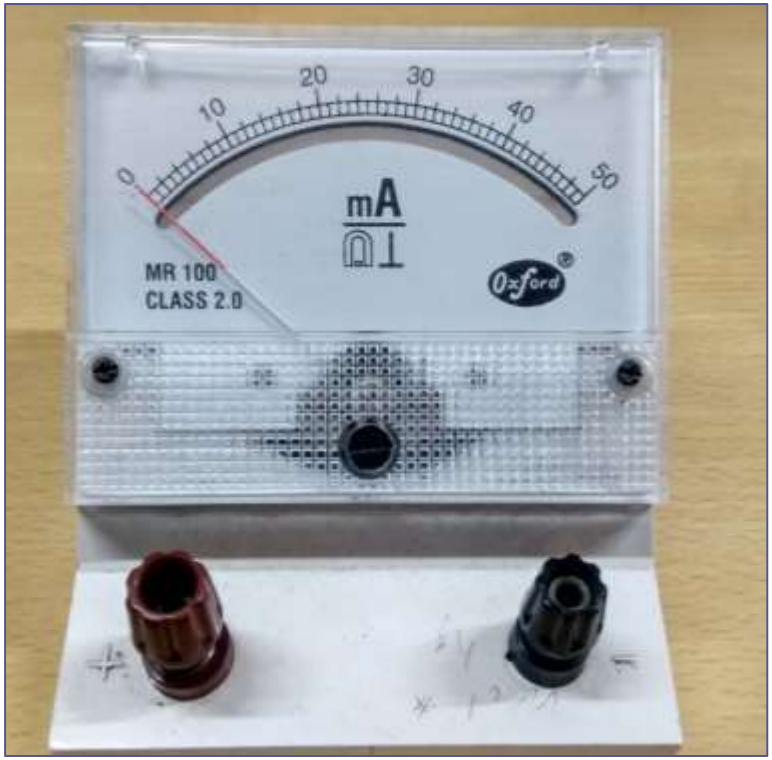


➢ Laboratory scaled electric Energy Source

A **regulated power supply** is an embedded circuit; it converts unregulated AC (Alternating Current) into a constant DC. Its function is to supply a stable voltage (or less often current), to a circuit or device that must be operated within certain power supply limits.

➢ Ammeter

An **Ammeter** is a measuring instrument used to measure the current in a circuit.



➢ Voltmeter

A **voltmeter** is an instrument used for measuring electric potential difference between two points in an electric circuit.

Getting Started with OrCAD Pspice Software

THANK YOU