



Semester: I Branch: Electrical and Electronics Engineering
Subject: Basic Electrical & Electronics Engineering Lab Code: EEE1102
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Course Description:

To understand the principle of DC-AC circuits. DC- AC machines analysis and their performance for single phase & three phase. Transformer performance analysis for ON load and OFF load condition.

Course Objectives:

1. To expose student to common electrical components and their ratings.
2. To understand the concepts of different types of AC-DC circuits, AC-DC machines, transformers & different switches for Industrial applications.

Syllabus:

List of Experiments: (Minimum 10 Experiments)

1. Study of Electrical Safety precautions.
2. Study of CRO, DSO, Function Generator, Multimeter, Power supply.
3. To verify KCL and KVL.
4. To verify Thevenin's Theorems.
5. To verify Norton's Theorems.
6. To verify Superposition Theorem.
7. Voltage-Current Characteristics of Incandescent lamp.
8. To study B-H Curve.
9. To measure Current, Power, Voltage and Power Factor of series R-L-C Circuit.
10. To measure R and L of a Chock Coil.
11. To measure Power in Three Phase Circuitry by Two Wattmeter Method.
12. To measure the armature and field resistance using Ohm's law.

13. To measure the turns ratio of single phase two winding transformer.
14. To draw the characteristics semiconductor diode.
15. To draw the characteristics Zener diode.
16. To design a half wave rectifier and to determine its efficiency and ripple factor.
17. To design a full wave rectifier and to determine its efficiency and ripple factor.

Equipment Required :

Circuit component, Bread Board, Hook up wire, power supply, CRO, DSO, Function Generator.

Reference Books & Manuals:

1. Dr. N.K Jain, “Practical in Elerctrical Engineering
2. David, “Laboratory manual for Electronic devices and circuits, 4th ed.

Course Outcomes:

At the end of this course the student will be able to:

1. Get an exposure to common electrical components and their ratings.
2. Make electrical connections by wires of appropriate ratings.
3. Understand the usage of common electrical measuring instruments.
4. Understand the basic characteristics of transformers and electrical machines.
5. Get an exposure to the working of power electronic converters.