2/4 B.Tech. FOURTH SEMESTER

ME4L2 ELECTRICAL & ELECTRONICS ENGG LAB Credits: 2

Lecture:- - **Internal assessment: 25marks**
Lab Practice: 3 periods/week **Semester end examination: 50 marks**

Objectives:

1. To provide students with practical knowledge of basic laws i.e ohms law, Kirchhoff's law and measure resistance.
2. To help students find V-I relationship for P-N Junction diodes, rectifiers and transistors.
3. To brief the students about magnetic and electric devices like transformers and motors

Learning outcomes:

At the end of course the students will be able to:

1. To verify various laws using electrical instruments
2. Students are expected to perform open circuits and short circuit tests on transformers and get familiar with various electric motors.
3. To get familiar with various electrical equipments liken junction diodes, transistors and plot their characteristics w.r.t reading taken.
4. Students are expected to know about the latest practical trends in electrical and electronic fields.

Pre-Requisites:

Basic Electrical and Electronics Engineering

PART A: ELECTRICAL ENGINEERING LAB:

The following experiments are required to be conducted as compulsory experiments:

1. Swinburne's test on D.C. Shunt machine. (Predetermination of efficiency of a given D.C. Shunt machine working as motor and generator).
2. OC and SC tests on single phase transformer (Predetermination of efficiency and regulation a given power factors)
3. Brake test on 3-phase Induction motor (Determination of performance characteristics)
4. Speed control of D.C. Shunt motor by
    1. Armature Voltage control b) Field flux control method
5. Brake test on D.C Shunt Motor

6. Open circuit Characteristics of DC shunt generator

SECTION B: ELECTRONICS ENGINEERING:

1. Transistor CE Characteristics (Input and Output)
2. Full wave Rectifier with and without filters.
3. Frequency response of CE Amplifier.
4. RC Phase Shift Oscillator
5. V-I Characteristics of a P-N Junction Diode
6. V-I Characteristics of a SCR