

BASIC ELECTRICAL & ELECTRONICS ENGINEERING LAB

Course Code: P18ESL01
Course Prerequisite: None

External Marks: 60
Internal Marks: 40

Course Objective:

1. To verify and demonstrate on safety precautions and Kirchhoff laws.
2. To demonstrate construction of transformer, rotating machines and various protective devices.
3. To verify superposition theorem and control of dc shunt motor using speed control methods.
4. To analyze the characteristics of PN junction diode and transistor CE characteristics
5. To analyze the characteristics of CE amplifier and operation of half-wave and full-wave rectifier.

Course Outcomes:

After completion of this course, the student is able to:

1. Get an exposure on safety precautions and verify Kirchhoff laws.
2. Get an exposure on construction of transformer, rotating machines and various protective devices.
3. Verify superposition theorem and control the speed of DC shunt motor using speed control methods.
4. Analyze the characteristics of PN junction diode and transistor CE characteristics.
5. Analyze the characteristics of CE amplifier and operation of half-wave and full-wave rectifier.

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

1. Basic safety precautions. Introduction and use of measuring instruments – voltmeter, ammeter, multi-meter, oscilloscope. Real-life resistors, capacitors and inductors.
2. Verification of Kirchhoff's laws.
3. Demonstration of construction of Transformer and Rotating machines.
4. Demonstration on various protective devices.
5. Verification of superposition theorem
6. Speed control of D.C. Shunt motor by
 - a) Armature Voltage control
 - b) Field flux control method
7. PN junction diode characteristics
 - a. Forward bias
 - b. Reverse bias (Cut in voltage and resistance calculations)
8. Transistor CE characteristics (Input and output)
9. CE Amplifier Characteristics
10. Half Wave rectifier and Full Wave Rectifier without filters