BASIC ELECTRONICS LAB SYLLABUS

1. Indicative Experiments

- Identification, marking of terminals, and value determination of electronic components
- Study of electronic measurement devices:
  - Multimeter
  - Digital Storage Oscilloscope (DSO)
  - Function Generator

2. V-I Characteristics of PN Junction Diodes and Zener Diodes

- Measurement and analysis of current-voltage characteristics for PN Junction diodes
- Measurement and analysis of current-voltage characteristics for Zener diodes

3. Half Wave and Full Wave Rectifier Circuits

- Design and analysis of Half Wave Rectifier circuits
- Design and analysis of Full Wave Rectifier circuits

4. Zener Diode as a Voltage Regulator

- Implementation of a Zener diode for voltage regulation
- Analysis of voltage regulation characteristics

5. Characteristics of BJT in Common Emitter Configuration

- Study of BJT behavior in Common Emitter (CE) configuration
- Measurement and plotting of BJT characteristics in CE configuration

6. Characteristics of MOSFET in Common Source Configuration

- Study of MOSFET behavior in Common Source (CS) configuration
- Measurement and plotting of MOSFET characteristics in CS configuration

7. Frequency Response of BJT Single Stage Amplifier

- Design and analysis of frequency response for a single stage BJT amplifier

8. Study of Signal Generation using RC Phase Shift Oscillator

- Implementation and analysis of RC Phase Shift Oscillator for signal generation
- Study of the oscillator's working principles and frequency stability

9. Study of Logic Gates and Implementation of Boolean Functions

- Practical study of basic logic gates
- Implementation of Boolean functions using logic gates

10. Strain Gauge Sensors for Measurement of Normal Strain

- Application of strain gauge sensors for measuring normal strain
- Analysis of strain measurements

11. Displacement Measurement using LVDT and LDR

- Use of Linear Variable Differential Transformer (LVDT) for displacement measurement
- Application of Light Dependent Resistor (LDR) for displacement measurement

12. Temperature Measurement using RTD, Thermistor, and Thermocouple

- Temperature measurement using Resistance Temperature Detector (RTD)
- Temperature measurement using Thermistor
- Temperature measurement using Thermocouple