



II Year-I Semester	L	T	P	C
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## Electronic devices and circuits LAB (RT21046)

### Prerequisite Course:

Need basic idea of Electronic devices and circuits subject

### Course Description and Objectives:

- To identify and test various electronic components
- To use DSO for various measurements
- To plot the characteristics of diode and transistor
- To design and implement feedback amplifier circuits.
- To measure the frequency of oscillators.

### Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes.

COs	Course Outcomes	POs
1	Identification of the basic circuit elements Measure the voltage, frequency and phase of any waveform using CRO	3
2	Analyze the characteristics of different electronic devices such as diodes (pn junction, zener)	3
3	Analyze the characteristics of different electronic devices like transistors (BJT, FET) etc.	3
4	Analyze the characteristics of different simple electronic circuits like rectifiers, amplifiers etc	3

### SYLLABUS

**Electronic Workshop Practice:** 1. Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Coils, Gang Condensers, Relays, Bread Boards. 2. Identification, Specifications and Testing of active devices, Diodes, BJTs, JFETs, LEDs, LCDs, SCR, UJT. 3. Soldering Practice- Simple circuits using active and passive components. 4. Study and operation of Ammeters, Voltmeters, Transformers, Analog and Digital Multimeter, Function Generator, Regulated Power Supply and CRO.

### **List of Experiments: (Minimum of Ten Experiments has to be performed)**

1. P-N Junction Diode Characteristics

Part A: Germanium Diode (Forward bias & Reverse bias)

Part B: Silicon Diode (Forward Bias only)

2. Zener Diode Characteristics

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**KAKINADA-533003, Andhra Pradesh, India**

R-13 Syllabus for ECE, JNTUK

Part A: V-I Characteristics

Part B: Zener Diode as Voltage Regulator

3. Rectifiers (without and with c-filter)

Part A: Half-wave Rectifier

Part B: Full-wave Rectifier

4. BJT Characteristics (CE Configuration)

Part A: Input Characteristics

Part B: Output Characteristics

5. FET Characteristics (CS Configuration)

Part A: Drain Characteristics

Part B: Transfer Characteristics

6. SCR Characteristics

7. UJT Characteristics

8. Transistor Biasing

9. CRO Operation and its Measurements

10. BJT-CE Amplifier

11. Emitter Follower-CC Amplifier

12. FET-CS Amplifier

**Equipment required:**

1. Regulated Power supplies

2. Analog/Digital Storage Oscilloscopes

3. Analog/Digital Function Generators

4. Digital Multimeters

5. Decade Resistance Boxes/Rheostats

6. Decade Capacitance Boxes

7. Ammeters (Analog or Digital)

8. Voltmeters (Analog or Digital)

9. Active & Passive Electronic Components