

ELECTRONIC DEVICES & CIRCUITS LABORATORY

Objective: The students can study the characteristics of electronic components and measuring instruments. They can analyze the characteristics PN, Zener diode, design rectifiers with and without filters, analyze transistor characteristics, study frequency response of amplifiers, measure frequency, phase of signals.



Sections Handled:

B.Tech II Year I Semester – Electronic Devices & Circuits lab - ECE - A&B Sections

B.Tech II Year II Semester – Electronic Devices & Circuits lab- EEE

Major Equipment Details:

S. No	Name of the Equipment/Make/Model No	Quantity
1.	Cathode Ray Oscilloscope Demonstrator Make: ScientechModel No: ST 2001E	1
2.	Function Generator Demo kit Make: ScientechModel No: NV 7102	1
3.	Cathode Ray Oscilloscope Make: Proview Model No: LG /EZ	15
4.	2 MHZ Function Generators Make: FALCONModel No: FG 002	15
5.	0-40V/2A Regulated Power Supply (Dual Channel) Make: ProviewModel No: PHY-8240D	15
6.	0-30V/2A Regulated Power Supply (Dual Channel) Make: ProviewModel No: PHY-8230D	8
7.	Digital Panel Voltmeters(0-20V) Make: Proview	18
8.	Digital Panel Voltmeters(0-20V) Make: Physitech	5
9.	Digital milli Ammeters (0-200 mA) Make: Proview	18
10.	Digital milli Ammeters (0-200 mA) Make: Physitech	5
11.	Digital Micro Ammeters (0-200 μ A) Make: NVIS	18
12.	Digital Micro Ammeters (0-200 μ A) Make: Physitech	5
13.	Digital Multimeters Make: ProviewModel No: CIE 123	20
14.	Decade Capacitance Box Make: NVISModel No: NV 711	10
15.	Decade Resistance Box Make: NVISModel No: NV 702	10
16.	Decade Inductance Box Make: NVISModel No: NV 714	10
17.	LCR METERMake: Physitech	1
18.	5 KVA Stabilizer Make: ITLModel No: SVS5000VA	1
19.	Soldering Station Make: ScientechModel No: CADDO 81	1
20.	DE Soldering Station Make: ScientechModel No: CADDO 82	1
21.	Drain & Mutual Characteristics of JFET Make: SS LabModel No: EDC 6	2
22.	Class B Push Pull Power AmplifierMake: SS lab	2
23.	Drain Characteristics of MOSFET Make: SS LabModel No: EDC 41	2
24.	Transistor Series Voltage regulator Make: SS LabModel No: EDC 19	2
25.	7812 Regulator Make: SS LabModel No: EDC 42	2
26.	VI Characteristics of UJT Make: SS LabModel No: EDC 33	2
27.	Hartley &Colpitts OscillatorMake: Scientech	3
28.	RC Phase Shift OscillatorMake: Scientech	3
	Total Cost	Rs. 6,53,258.04

Faculty Lab Incharge with qualification: Mr.P.VeeraSwamy, M.Tech**Lab Technician name with qualification: Mrs.P.RatnaPrasanna, DECE****Experiment list as per curriculum:**

PART A: Electronic Workshop Practice:

1. Identification, Specifications, Testing of R, L, C Components (Color Codes), Potentiometers, Coils, Gang Condensers, Relays, Bread Boards.
2. Identification, Specifications and Testing of Active Devices, Diodes, BJTs, JFETs, MOSFETs, LEDs, LCDs, SCR, UJT.
3. Soldering practice – Simple Circuits using active and passive components.
4. Study and operation of Ammeters, Voltmeters, Transformers, Multimeters (Analog and Digital), Function Generator, Regulated Power Supplies and CRO.

PART B: List of Experiments**(For Laboratory examination – Minimum of 10 experiments)**

1. PN Junction diode characteristics
 - A. Germanium Diode (Forward bias & Reverse bias)
 - B. Silicon Diode (Forward bias only)
2. Zener diode characteristics
 - A. V-I characteristics
 - B. Zener Diode as a voltage regulator
3. Rectifier (without and with C-filter)
 - A. Half wave Rectifier
 - B. Full wave Rectifier
4. BJT Characteristics (CE Configuration)
 - A. Input characteristics
 - B. Output characteristics
5. FET Characteristics
 - A. Drain characteristics
 - 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

Experiment list beyond the curriculum

1. BJT Characteristics (CB Configuration)
 - A. Input characteristics
 - B. Output characteristics
2. Comparison of Performance of Self Bias & Fixed bias circuits