



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(An Autonomous Institution Since 2010)

Approved by AICTE, New Delhi and Permanently Affiliated to JNTUK, Kakinada
Accredited by NAAC with Grade 'A' & ISO: 21001:2018, 50001:2018, 14001:2015 certified

Department of Electrical and Electronics Engineering

Accredited by NBA under Tier-I

Electronic Circuits and Devices Lab

The purpose of these laboratory courses is to introduce the simple electronic circuits using commonly available electronic components, enabling students to analyze, design, and test basic and complex circuits using various components and tools.



Electronic Circuits and Devices Lab Equipment List

S.NO	EQUIPMENT NAME	QTY
1.	SM0502 50 MHz Digital Oscilloscope 2-CH NDS10PA3150087 ,NDS10PA3150091 NDS10PA3150113 NDS10PA3150114 Make: Scientific	04
2.	Scientific PSD 3203 Dual Power supply Make: Scientific	04
3.	Scientific SM5070 3 MHz Function Generator Make: Scientific	04
4	Scientific SM5070 3Mhz Function Generator: Microcontroller Based Design Make: Scientific	04
5	Scientific psd3203 Dual Power Supply DC Output : 2X 0-30V/3A Make: Scientific	04
6	Scientific SM0502 50MHz Digital Oscilloscope 2-CH Make: Scientific	04

List of Experiments

ELECTRONIC CIRCUITS AND DEVICES LAB

1. Study the characteristics of PN junction diode.
2. Study the characteristics of Zenar diode.
3. Calculation of Ripple factor and regulation of Full wave rectifier with & without filters.
4. Determination of h-parameters of transistor from CE characteristics.
5. Determination of h-parameters of transistor from transistor CB characteristics.
6. Determination of h-parameters of transistor from FET transfer characteristics.
7. Calculation of parameters from FET characteristics.
8. Calculation of Band width of CE Amplifier.
9. Calculation of Band width of CC Amplifier.
10. Study the characteristics SCR Characteristic



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DIGITAL ELECTRONICS LAB

The Digital Electronics Laboratory is a unit of the Electrical and Instrumentation Engineering. The role of this laboratory is to educate undergraduate and graduate students the concept and techniques of Digital Electronics and carry out cutting-edge research in this area



Lab Equipment List

S.NO	EQUIPMENT NAME	QTY
1.	SM0502 50 MHz Digital Oscilloscope 2-CH NDS10PA3150087 ,NDS10PA3150091 NDS10PA3150113 NDS10PA3150114 Make: Scientific	04
2.	Scientific PSD 3203 Dual Power supply Make: Scientific	04
3.	Scientific SM5070 3 MHz Function Generator Make: Scientific	04
4	Scientific SM5070 3Mhz Function Generator: Microcontroller Based Design Make: Scientific	04
5	Scientific psd3203 Dual Power Supply DC Output : 2X 0-30V/3A Make: Scientific	04
6	Scientific SM0502 50MHz Digital Oscilloscope 2-CH Make: Scientific	04

List of Experiments

1. a) Basic Gates Function Verification using truth tables.
i) AND Gate using 7408 IC ii) OR Gate using 7432 IC iii) NOT Gate using 7404 IC
b) Universal Gates Functional Verification
i) NAND Gate using 7400 IC ii) NOR Gate using 7402 IC
c) Special Gates Functional verification
i) XOR Gate using 7486 IC ii) XNOR Gate using XOR followed by NOT Gate
2. Realization of following gates using universal gates and its functional verification. AND, OR, XOR, NOT
3. a) Design Half-adder and Full-adder circuits and verify its functionality.
b) Verify the functionality of four bit ripple carry adder for signed and unsigned integers with the verification of overflow condition
4. Design a four bit comparator and verify its functionality (using logic gates or IC's)
5. Design a BCD to Excess-3 code converter and verify its functionality using logic gates.
6. Design a BCD to Gray code converter and verify its functionality using logic gates.
. 7. Design and verify the functionality of Decoders and multiplexers with different in puts
8. Verify the functionality of following Flip-Flop a) SR Flip-Flop b) JK Flip-Flop c) D Flip-Flop d) T Flip-Flop
. 9. a) Design and verify UP-Counter using JK/T Flip-Flops
b) Design and verify MOD-3 Counter
10. Design and verify Bi-directional Counter using JK/T Flip-Flop



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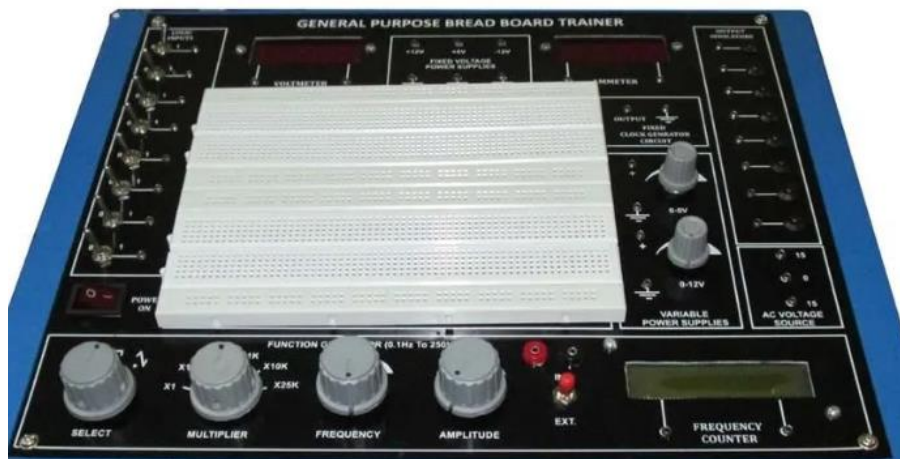
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ANALOG ELECTRONICS LAB

Analog electronics is a field of study where various electronic circuits are studied which helps in bridging the gap between the real world and analog world. This lab deals with various electronic techniques and building blocks



Lab Equipment List

S.NO	EQUIPMENT NAME	QTY
1.	Scientific SM0502 50MHz Digital Oscilloscope 2-CH Make: Scientific	04
2.	Scientific PSD3203 Dual Power Supply DC Output : 2X 0-30V/3A Make: Scientific	04
3.	Scientific SM5070 3Mhz Function Generator: Microcontroller Based Design Make: Scientific	04

List of Experiments

1. Realisation of adder, subtractor, comparator circuits using op-Amp
2. Design of LPF,HPF(first order) using Op-Amp
3. Design of Differentiator and Integrator using Op-Amp
4. RC phase shift oscillator using op-amp
5. Wien bridge oscillator using op-amp

6. Design of Monostable and Astable multivibrator circuits using IC 555 timer.
7. Design of Voltage regulator using IC 723
8. PLL characteristics and frequency multiplier using PLL IC 565
9. Implementation of 3-bit DAC using Op-Amp
10. Voltage controlled oscillator using IC 566



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Basic ELECTRICAL & ELECTRONICS ENGINEERING LAB

The primary purpose of a basic Electrical & Electronics Engineering lab is to provide students with hands-on experience and practical understanding of fundamental electrical and electronic concepts, circuits, and systems through experiments and practical training.



List of experiments:

Part -A

1. Verification of KCL and KVL
2. Verification of Superposition theorem
3. Measurement of Resistance using Wheat stone bridge
4. Magnetization Characteristics of DC shunt Generator
5. Measurement of Power and Power factor using Single-phase wattmeter
6. Measurement of Earth Resistance using Megger
7. Calculation of Electrical Energy for Domestic Premises :

Part -B

1. Plot V-I characteristics of PN Junction diode A) Forward bias B) Reverse bias.
2. Plot V – I characteristics of Zener Diode and its application as voltage Regulator.
3. Implementation of half wave and full wave rectifiers
4. Plot Input & Output characteristics of BJT in CE and CB configurations
5. Frequency response of CE amplifier.

6. Simulation of RC coupled amplifier with the design supplied
7. Verification of Truth Table of AND, OR, NOT, NAND, NOR, Ex-OR, Ex-NOR gates using ICs

LAB INCHARGE : Mr. P. Deepak Reddy

LAB Technician. : Mr. p.Nagireddy

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