EC102 Elements of Electronics Lab

L-T-P-Cr: 0-0-3-1;

 Total Lab Sessions-12 Prerequisites:

 EC-101

Objective: This lab course indented to make students familiar with all varieties of basic electronics devices and their operational principle. The lab course consists of analysis, design and application of semiconductor devices like diodes, bipolar junction transistors, and field effect transistors, op-amps. After obtaining clear understating wide variety of circuits are analyzed in analog circuits. Course Outcome: Upon successful completion of this course, students should be able to: Understand the working of semiconductor devices, and attain skills to design diodes in rectifiers, clippers and clampers. Understand the operation of transistors as common base and common emitter. Understand the operational amplifier circuits.

Understand basic digital logic circuits.

List of Experiments of Elements of Electronics Lab

 Experiment No.01:-Study of Cathode Ray Oscilloscope (C RO) (a) Measurement of amplitude, time period and frequency of unknown continuous tirpe signals.(b) Use of Lissajous pattern for unknown frequency measurement of signal.

 Experiment No.02: Identification of Active and Passive component.

Experiment No. 03: Study of characteristics of P-N junction diode under (a) Forward bias, and (b) Reverse bias

 Experiment No. 04: Study of characteristics of zener diode under (a) Forward bias (b) Reverse bias (as voltage regulator)

Experiment No. :- 05: Study of clipping circuits and clamping circuits. Experiment No. :- 06: Study of performance of Full wave Bridge Rectifier with filter circuits.

Experiment No. :- 07: Study of input and output characterization of common base (CB) BJT (Bipolar junction transistor)

Experiment No. :- 08: Study of input and output characterization of CE (common emitter) transistor. Experiment No. :- 09: Study of frequency response of common Emitter BJT.

 Experiment No. :- 10: Study of output and transfer characterization of JFET (Junction field effect transistor

) Experiment No. :- 11: Study of Operational Amplifier as (i) Inverting (ii) Non-inverting using uA741 IC. Experiment No. :- 12: Construction and Verification of all other gate (AND, OR, NOT, XOR) using only a) NOR gate b) only NAND gate\