

Basic Electronics Lab (EC – 1002)

Course Code	EC-1002	Credits-2	L –0, T-0, P- 2
Name of the Course	Basic Electronics Lab		
Lectures to be Delivered	24 hours of Lab work (2 hours per week)		
Semester End Examination	<i>Max. Marks: 50</i>	<i>Min. Pass Marks: 40%</i>	Maximum Time:3hrs
<i>Laboratory</i> Continuous Assessment	Lab work 30%, Lab Record 25%, Viva/ Hands on 25%, Attendance 20%)	<i>Max. Marks: 50</i>	<i>Min. Pass Marks: 25</i>

Instructions for paper setter/ Candidates

Laboratory examination will consist of two parts:

- (i) Performing a practical examination assigned by the examiner (25 marks)
- (ii) Viva-voce examination (25 marks)

Viva-voce examination will be related to the practicals performed / projects executed by the candidate related to the paper during the course of the semester.

List of Experiments:

1. (a)To study the use and scope of using an oscilloscope as a measuring device in an electronic laboratory.
- (b)To study the use and scope of using a multimeter (digital and analog) as a measuring device in an electronics laboratory.
- (c)To study the use and scope of function generator as a signal source in an electronics laboratory.

Set up an experiment to:

2. Draw forward bias and reverse bias characteristics of a pn junction diode and use it as a half wave and full wave rectifier.
3. Draw the characteristics of a zener diode and use it as a voltage regulator.
4. Draw characteristics of common base configuration of pnp transistor.
5. Draw characteristics of common emitter configuration of an npn transistor.
6. Draw characteristics of common drain configuration of a MOSFET
7. Find the voltage and current gain of single stage common emitter amplifier.
8. Draw the characteristics curve of UJT.
9. Find the voltage gain of single stage voltage series feedback amplifier.
10. Use operational amplifier as
 - i) Inverting amplifier
 - ii) Non-inverting amplifier
 - iii) Comparator
11. Use operational amplifier as
 - i) Integrator
 - ii) Differentiator
12. Use operational amplifier as
 - i) Adder
 - ii) Precision amplifier
13. Find the overall voltage gain and current gain of a two stage RC coupled amplifier.

Basic electronics should stress on interfacing with real life devices and general purpose linear units. Emphasis is on system design and not on discrete components, some of the components around which exercises can be built are

1. SCR as triacs and power control
2. Power supplies starting with zener
3. Op to compliers and isolations where photo diode, transistors, leds are used.
4. Laser diode (laser pointer)

5. Op amps

6. Op amps for instrument amplifiers.

Note:- *Record to be maintained in the laboratory record book for evaluation. Usage of bread board approach to be encouraged.*