

Name of the Faculty
Discipline
Semester and Subject
Lesson Plan Duration

Indu bala
Computer Engg
2nd , AIT
15 Weeks
Lectures-02, Practical-04

Work Load (Lecture / Practical) per week (in hours)

Week	Theory		Practical(G1+G2)	
	Lecture Day	Topic (including assignment / test)	Practical Day(G1+G2)	Topic
1st	1st	Introduction to Semiconductors and Diodes: Electrons- free and valence	1st	Familiarity with working knowledge of the following Instruments. (a) CRO (b) Multimeter (c) Function generator (d) Regulated power supply (e) Active passive components (f) Bread Board
	2nd	Conductors, Insulators, and Semiconductors- definition & energy band diagrams	2nd	Study of V-I Characteristics of a Diode.
2nd	3RD	Properties of semiconductors. Meaning of Hole current, electron-hole pairs	3rd	Study and draw the characteristics of half wave and full wave rectifiers
	4TH	Intrinsic and Extrinsic semiconductors, N and P type semiconductors	4th	Study and draw the characteristics of rectifier filter circuit
3rd	5TH	Diode- formation, depletion region, VI Characteristics, ratings, types and applications. Zener diode- reverse bias characteristics	5th	Study of Clipping & Clamping circuit
	6TH	voltage regulation, shunt voltage regulator, and applications. Varistor and Thermistor working and applications.	6th	Study zener diode characteristics
4th	7TH	Transistors and MOSFETs: Transistors- definition, terminals, types, symbols, formation of NPN and PNP	7th	Study zener diode as voltage regulator

	8TH	Transistor biasing- definition, importance, list types, stabilisation, thermal runaway, heat sink, and voltage divider method	8th	Study the characteristics of transistor in Common Base configuration
5th	9TH	List configurations and applications transistor. Alpha and Beta- definitions, relation. CE input and output characteristics- cut off, saturation	9th	Plot and study the input and output characteristics of BJT in common emitter configuration
	10TH	Transistor as a switch. List applications. FET- definition, types. MOSFET- definition, types, symbol.	10th	Graphical determination of small signal hybrid parameter of BJT.
6th	11TH	N type enhancement mode- construction, working, characteristics, switch	11th	Study and draw the characteristics of FET in common source configuration
	12TH	List applications and ratings. Differentiate BJT and MOSFET.	12th	Study characteristics of SCR
7th	13TH	Rectifiers, filters and regulators: Regulated power supply- block diagram and applications	13th	Study of characteristics of DIAC
	14TH	Rectifiers- definition, half wave, centre tapped and bridge full wave rectifier, efficiency, ripple factor, PIV, ratings	14th	Revision
8th	15TH	Filters- definition, necessity, C and PI filters, Regulator- definition, working of 7805, operating voltages- 7809, 7812, 7905, 7912	15th	Revision
	16TH	Amplifiers and Oscillators: Amplifier- definition, faithful amplification, classification based on configuration, power, and frequency	16th	Revision

9th	17TH	ASSIGNMENT AND NOTE BOOK CHECKED	17TH	Revision
	18TH	Transistor CE amplifier with biasing. Working of class A, B, C, and Push pull amplifier. Two stage RC coupled amplifier working, gain in dB, frequency response	18TH	Revision
10th	19TH	Feed back- definition, types, advantages and disadvantages, applications	19TH	Revision
	20TH	Test	20TH	Revision
11th	21ST	Oscillators- definition, classification, LC tank circuit, criteria	21ST	Revision
	22ND	RC phase shift and crystal oscillator- working, applications. CRT- construction, working and applications.	22ND	Revision
12th	23RD	OPAMP– definition, block diagram, operation, characteristics, applications, μA 741 pin diagram	23RD	Revision
	24TH	Definitions of virtual ground, CMRR and Slew rate. OPAMP applications– inverting, integrator, differentiator, summer, voltage follower, and comparator	24TH	Revision
13th	25TH	Filters- definition, Working- low pass, high pass passive and active filters, applications	25TH	Revision
	26TH	Timers– block diagram	26TH	Revision
14th	27TH	Test	27TH	Revision
	28TH	Timers– pin diagram of 555, duty cycle, time constant, applications	28TH	Revision
15th	29TH	Multi-vibrators- Astable and monostable using 555.	29TH	Revision
	30TH	Revision	30TH	Revision

