Lesson Plan

Name of Faculty : Deepak Garg
Discipline : ECE
Semester : 2nd sem
Subject : EDC1
Lesson Plan Duration : 14 weeks(from 20 January 2025 to May 2025)
Work Load (lecture/practical)per week (in hours) : Theory-03, Practical-04

Week	Theory		Practical	
	Lecture Day	Topic	Practical Day	Topic
1	1	UNIT-1 Review of basic atomic structure and energy levels, concept of insulators	1	Plotting of V-I characteristics of a PN junction diode
	2	conductors and semiconductors, atomic structure of Germanium (Ge) and Silicon (Si), covalent bonds	2	Viva-Voice
	3	Concept of intrinsic and extrinsic semiconductor, process of doping.		
2	4	Energy level diagram of conductors, insulators and semiconductors	3	Plotting of V-I characteristics of a Zener diode
	5	minority and majority charge carriers	4	Viva-Voice
	6	P and N type semiconductors and their conductivity, effect of temperature on conductivity of intrinsic semiconductors		
3	7	UNIT II PN junction diode, mechanism of current flow in PN junction, forward and reverse biased PN junction,	5	To observe input and output of series clipping circuits.
	8	potential barrier, drift and diffusion currents, depletion layer, concept of junction capacitance in forward and reverse biased condition	6	Viva-Voice
	9	V-I characteristics, static and dynamic resistance and their value calculation from the characteristics		
4	10	Assignment -1	7	To observe input and output of shunt clipping circuits.
	11	Revision of 1st sessional exam	8	Viva-Voice
	12	Sessional exam -1		
5	13	Application of diode as half-wave, full wave and bridge rectifiers. Peak Inverse Voltage, rectification efficiencies and ripple factor calculations	9	To observe input and output of positive clamping circuit.
	14	shunt capacitor filter, series inductor filter, LC and π filters	10	Viva-Voice
	15	Types of diodes, characteristics and applications of Zener diodes		
6	16	Zener and avalanche breakdown	11	To observe input and output of negative clamping circuit
	17	Introduction to Clipping and Clamping Circuits		

	18	UNIT III Concept of a bipolar transistor, its structure, PNP and NPN transistors their symbols and mechanism of current flow; Current relations in a transistor; concept of leakage current;	12	Viva-Voice
7	19	CB, CE, CC configurations of a transistor; Input and output characteristics in CB and CE configurations; input and output dynamic resistance in CB and CE configurations	13	Fabrication of Half-wave rectifier circuit on breadboard and observe the output
	20	Current amplification factors, relation between α, β and γ. Comparison of CB, CE and CC Configurations	14	Viva-Voice
	21	Transistor as an amplifier in CE Configuration, concept of DC load line and calculation of current gain and voltage gain using DC load line.		
8	22	Assignment -2	15	Fabrication of Full-wave rectifier circuit on breadboard and observe the output
	23	Revision of 2nd sessional exam	16	Viva-Voice
	24	Sessional exam -2		
9	25	UNIT IV Concept of transistor biasing and selection of operating point	17	Plotting of the wave shape of full wave rectifier with a) Shunt capacitor filter b) Series inductor filter
	26	Need for stabilization of operating point.	18	Viva-Voice
	27	Different types of biasing circuits. Single stage transistor amplifier circuit		
10	28	concept of dc and ac load line and its use	19	Plotting of input and output characteristics and calculation of parameters of transistors in CE configuration
	29	Explanation of phase reversal of output voltage with respect to input voltage.	20	Viva-Voice
	30	UNIT V Construction, operation and characteristics of FETs and their applications		
11	31	Construction, operation and characteristics of a MOSFET in depletion and enhancement modes and its applications.	21	Plotting of input and output characteristics and calculation of parameters of transistors in CB configuration.
	32	Comparison of JFET, MOSFET and BJT	22	Viva-Voice
	33	Revision of Chapter-5		
12	34	Assignment -3	23	Measurement of voltage gain, input and output impedance in a single stage CE amplifier circuit
	35	Revision of 3rd sessional exam	24	Viva-Voice
	36	Sessional exam -3		
13	37	Revision of chapter 1,2,3	25	Plotting of V-I characteristics of FET.
	38	Revision of chapter 4,5	26	Viva-Voice
	39	Revision of very short answer questions		
14	40	Revision of short answer questions	27	Viva-Voice

	41	Revision of long answer questions	28	Viva-Voice
	42	Revision		