Lesson Plan

Name : **Meenakshi**
Discipline : **ECE**
Semester : **2nd**
Subject : **Electronic Devices and Circuits -1**
Lesson Plan Duration : **15 Week (From March 2023 to July 2023**
Work Load (Lecture / Practical) Per Week (In Hours) :- Lecture -03, Practical -04 Per Group

Week	Theory		Practical		
	Lecture /Hrs	Topic (Including Assignment /Test)	Practica /Hrs		Experiment
1st	1	Review of basic atomic structure an energy levels,.	Group -1	1	Plotting of V-I characteristics of a PN junction diode
	2	Concept of insulators Conductors and semiconductors,		2	
	3	Atomic structure of Germanium (Ge) an Silicon (Si), covalent bonds.		3	
				4	
2nd	1	Concept of intrinsic and extrins semiconductor.	Group -2	1	Plotting of V-I characteristics of Zener diode
	2	Concept of intrinsic and extrins semiconductor		2	
	3	Process of Doping.		3	
				4	
3rd	1	Energy level diagram of conductors	Group -3	1	To observe input and output of Series clipping circuits.
	2	Insulators and semiconductors		2	
	3	Minority and majority charge carries		3	
				4	
4th	1	P and N type semiconductors and their conductivity,	Group -4	1	To observe input and output of shunt clipping circuits.
	2	Effect of temperature on conductivity of intrinsic semiconductors		2	
	3	Effect of temperature on conductivity of intrinsic semiconductors		3	
				4	
5th	1	Assignment – 1	Group -5	1	To observe input and output of positive clamping circuit.
	2	Sessional Test -1		2	
	3	PN junction diode, mechanism of current flow in PN junction, forward and reverse biased PN junction potential barrier, drift and diffusion currents, depletion layer, Concept of junction capacitance in forward and reverse biased condition .		3	
				4	
6th	1	V-1 characteristics,	Group -6	1	To observe input and output of negative clamping circuit.
	2	Static and dynamic resistance and their value calculation from the characteristics.		2	
				3	

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	3	Static and dynamic resistance and their value calculation from the characteristics.		4	
7th	1	Application of diode as half –wave, full wave and bridge rectifiers.	Group -7	1	Fabrication of Half - wave rectifier circuit on breadboard and observe the output
	2	Peak inverse voltage , rectification efficiencies and ripple factor calculations ,		2	
	3	Shunt capacitor filter, series inductor filter, LC and filters.		3	
				4	
8th	1	Types of diodes, characteristics and applications of Zener diodes.	Group -8	1	Fabrication of Full- wave rectifier circuit on breadboard and observe the output
	2	Types of diodes, characteristics and applications of Zener diodes.		2	
	3	Zener and avalanche breakdown		3	
9th	1	Introduction to clipping and clamping circuits.	Group -9	1	Plotting of the wave shape of full wave rectifier with a. Shunt capacitor filter b. Series inductor filter
	2	Introduction to clipping and clamping circuits.		2	
	3	Introduction to clipping and clamping circuits.		3	
				4	
10th	1	Assignment – 2	Group -10	1	Plotting of the wave shape of full wave rectifier with a. Shunt capacitor filter b. Series inductor filter
	2	Sessional Test -2		2	
	3	Concept of a bipolar transistor , its structure, PNP and NPN transistors, Their symbols and mechanism of current relations in a transistor; concept of leakage current ;		3	
				4	
11th	1	CB,EC,CC configurations of a transistor; input and output characteristics in CB and CE configurations;	Group -11	1	Plotting of input and output characteristics and calculation of parameters of transistors in CE configuration.
	2	Input and output dynamic resistance in CB and CE configurations;		2	
	3	Current amplification factors, relation between a, b and y. Comparison of CB, CE and CC configurations ;		3	
				4	

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12th	1	Transistor as an amplifier in CE Configuration ;	Group -12	1	Plotting of input and output characteristics and calculations of parameters of transistors in CB configuration
	2	Concept of DC load line and calculation of current gain and voltage gain using DC load line.		2	
	3	Concept of DC load line and calculation of current gain and voltage gain using DC load line		3	
				4	
13th	1	Concept of transistor biasing and selection of operating point. Need for stabilization of operating point.	Group -13	1	Plotting of input and output characteristics and calculations of parameters of transistors in CB configuration
	2	Different types of biasing circuits. Single stage transistor amplifier circuit, concept of dc and ac load line and its use.		2	
	3	Explanation of phase reversal of output voltage with respect to input voltage.		3	
				4	
14th	1	Construction, operation and characteristics of FETs and their applications.	Group -14	1	Measurement of voltage gain, input and output impedance in a single stage CE amplifier circuit.
	2	Construction, operation and characteristics of a MOSFET in depletion and enhancement modes and its applications.		2	
	3	Construction, operation and characteristics of a MOSFET in depletion and enhancement modes and its applications.		3	
				4	
15th	1	Comparison of JFET, MOSFET and BJT.	Group -15	1	Plotting if V-I characteristics if FET.
	2	Assignment – 3		2	
	3	Sessional Test -3		3	
				4	