

Lesson Plan

Name of the faculty : POONAM SHARMA
 Discipline : Electrical
 Semester : 6th
 Subject : Electronics-I
 Lesson Plan Duration : 15 weeks (from January 18 to April 2018)

Work load (Lecture/Practical) per week (55 minutes) : Lectures-03 , Practicals-04

Week	Theory		Practical Day	
	Lecture day	Topic (Including assignment/test)	Practical Day	Topic
1st	1st	Introduction of subject	1st	1a) Identification and testing of electronic components such as resistor, inductor, capacitor, diode, transistor and different types of switches used in Electronic circuits
	2nd	Chapter 1. Semiconductor Diodes	2nd	1a) Identification and testing of electronic components such as resistor, inductor, capacitor, diode, transistor and different types of switches used in Electronic circuits
	3rd	PN Junction, mechanism of current flow in PN junction		
2nd	4th	drift and diffusion currents, depletion layer, potential barrier	3rd	1.b) Measurement of resistances using multimeter and their comparison with colour code values
	5th	effect of forward and reverse biasing in a PN junction	4th	1.b) Measurement of resistances using multimeter and their comparison with colour code values
	6th	. Concept of junction capacitance in forward and reverse biased conditions.		
3rd	7th	2 Ideal diode, Semiconductor diode characteristics, static and dynamic resistance	5th	2. To plot V-I characteristics of a Semiconductor diode and to calculate its static and dynamic resistance
	8th	3 Use of diode as half wave and full wave rectifiers (centre tapped and bridge type	6th	2. To plot V-I characteristics of a Semiconductor diode and to calculate its static and dynamic resistance
	9th	relation between DC output and AC input voltage, rectifier efficiency		
4th	10th	Concept of ripples, filter circuits – shunt capacitor, series inductor, and pie (π) filters and their applications	7th	viva
	11th	Various types of diodes such as zener diode, varactor diode, schottky diode, light emitting diode, photo diode; their working characteristics and applications	8th	viva
	12th	6 Zener diode and its characteristics		
5th	13th	1.7 Use of zener diode for voltage stabilization	9th	3. To plot V-I characteristics of a zener diode and finding its reverse breakdown voltage
	14th	Ch-2 Bi-polar Transistors Concept of junction transistor , PNP and NPN transistors, their symbols and mechanism of current flow	10th	3. To plot V-I characteristics of a zener diode and finding its reverse breakdown voltage
	15th	Transistor configurations: common base (CB), common emitter (CE) and common collector (CC),		
6th	16th	current relation and their input/output characteristics; comparison of the three configurations	11th	viva
	17th	Assignment & copy checking	12th	4. Observation of input and output wave shapes of a half-wave rectifier and verification of relationship between dc output and ac input voltage
	18th	Assignment & copy checking	13th	4. Observation of input and output wave shapes of a half-wave rectifier and verification of relationship between dc output and ac input voltage
19th	Ch-3 Transistor Biasing and Stabilization , its need, operating point			
20th	effect of temperature on the operating point of a transistor and need of stabilization of operating point			
7th	21th	Different biasing circuits, limitations	14th	5. Observation of input and output wave shapes of a full wave rectifier and verification of relationship between dc output and ac input voltage
	22th	simple problems to calculate operating point in different biasing circuits.	15th	5. Observation of input and output wave shapes of a full wave rectifier and verification of relationship between dc output and ac input voltage
	23th	Concept of h-parameters of a transistor		
8th	24th	assignment & copy checking	16th	viva

9th	25th	Ch -4 Single-Stage Transistor Amplifiers (10 Periods)	17th	6. Observation of input and output wave shapes of a full wave rectifier with (i) shunt capacitor (ii) series inductor (iii) π filter circuits
	26th	Single stage transistor amplifier circuit in CE configuration, function of each component, Working of single stage transistor amplifier	18th	6. Observation of input and output wave shapes of a full wave rectifier with (i) shunt capacitor (ii) series inductor (iii) π filter circuits
	27th	, physical and graphical explanation, phase reversal		
10th	28th	Concept of DC and AC load line	19th	viva
	29th	Voltage gain of single stage transistor amplifier using characteristics of the device, Concept of input and output impedance	20th	6. Observation of input and output wave shapes of a full wave rectifier with (i) shunt capacitor (ii) series inductor (iii) π filter circuits
	30th	AC equivalent circuit of single stage transistor amplifiers		
11th	31th	Frequency response of a single stage transistor amplifier	21th	rectifier with (i) shunt
	32th	assignment© checking	22th	capacitor) (ii) series inductor (iii) π filter circuits
	33th	Multi-Stage Transistor Amplifiers Need of multi-stage transistor amplifiers		
12th	34th	– different types of couplings, their purpose and applications.	23th	7. Plotting input and output characteristics of a transistor in CB configuration
	35th	Knowledge of various terms such as voltage gain, current gain, power gain,	24th	7. Plotting input and output characteristics of a transistor in CB configuration
	36th	RC coupled two-stage amplifiers, circuit details, working, frequency response, applications		
13th	37th	4 Loading effect in multistage amplifiers 5.5 Emitter follower and its applications for input impedance and load coupling	25th	8. Plotting input and output characteristics of a transistor in CE configuration
	38th	Elementary idea about direct coupled amplifier, its limitations and applications	26th	8. Plotting input and output characteristics of a transistor in CE configuration
	39th	7 Transformer coupled amplifiers, its frequency response. Effect of co-efficient of coupling on frequency response. Applications of transformer coupled		
14th	40th	assignment© checking	27th	9. Measurement of operating point in case of (i) fixed biased circuit (ii) potential divider biasing circuit and to observe the effect of temperature variation on the operating point.
	41th	Field Effect Transistor (FET) (04 Periods) 6.1 Construction, operation, characteristics and applications of a N channel JFET and P channel JFET	28th	9. Measurement of operating point in case of (i) fixed biased circuit (ii) potential divider biasing circuit and to observe the effect of temperature variation on the operating
	42th	Types, construction, operation, characteristics and applications of a MOSFET		
15th	43th	Comparison between BJT, JFET and MOSFET 6.4 Power MOSFET	29th	viva
	44th	Assignment work	30th	viva
	45th	Sessional test		