SUDDHANANDA ENGINEERING AND RESEARCH CENTER

ACADEMIC YEAR-2022-23

Discipline : ELECTRICAL ENGG.	Semester: 4th Sem	Name of the Teaching Faculty : Santosh Kumar Das
Subject : A.E.C&OPMP		

Unit	TOPICS	NO OF PERIOD REQUIRED
I	P-N Junction Diode ,Working of Diode	1
	V-I characteristic of PN junction Diode.	1
	DC load line, Important terms such as Ideal Diode, Knee voltage	1
	Junctions break down. , Zener breakdown , Avalanche breakdown	1
	P-N Diode clipping Circuit.	1
	P-N Diode clamping Circuit	1
II	Thermistors, Sensors & barretters	1
	Zener Diode	1
	Tunnel Diode , PIN Diode	1
	RIVISION	1
III	Classification of rectifiers	1
	Analysis of half wave, full wave centre tapped calculate: ,DC output current and voltage, RMS output current and voltage,	1
	Rectifier efficiency Ripple factor, Regulation, , Transformer utilization factorPeak inverse voltage	1
	DC output current and voltage , RMS output current and voltage	1
	Rectifier efficiency , Ripple factor , Regulation, Transformer utilization factor	1

		,Peak inverse voltage	
		Analysis Bridge rectifiers ,DC output current and voltage, RMS output current and voltage, Rectifier efficiency , Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage	1
		Filters: , Shunt capacitor filter , Choke input filter , π filte	1
IV		TRANSISTORS:Principle of Bipolar junction transistor	1
		Different modes of operation of transistor , Current components in a transistor	1
		Transistor as an amplifier	1
		Transistor circuit configuration & its characteristicsCB Configuratio	1
		CE Configuration,CC Configuration	1
V		Transistor biasing , StabilizationStability factor	1
		Different method of Transistors Biasing	1
		Base resistor method,Collector to base bias	1
		Self bias or voltage divider method	1
VI		Practical circuit of transistor amplifier	1
		DC load line and DC equivalent circuit, AC load line and AC equivalent circuit	1
		Calculation of gain ,Phase reversal	1
		H-parameters of transistors , Simplified H-parameters of transistors	1
		Generalised approximate model Analysis of CB, CE, CC amplifier using generalised approximate modelMulti stage transistor amplifier	1
		R.C. coupled amplifier ,Transformer coupled amplifier	1
		Feed back in amplifier ,General theory of feed back , Negative feedback circuit , Advantage of negative feed back	1
		Power amplifier and its classification , Difference between voltage amplifier and power amplifier	1
		Oscillators , Types of oscillators , Essentials of transistor oscillator	1
		Principle of operation of tuned collector	1
		Hartley, colpitt,	1
		phase shift, wein bridge oscillator (no mathematical derivations)	1

VII	Classification of FET ,Advantages of FET over BJT , Principle of operation of BJT		1
	FET parameters (no mathematical derivation) ,1 DC drain resistance		1
	AC drain resistance , Trans-conductance		1
	Biasing of FET		1
	General circuit simple of OP-AMP and IC – CA – 741 OP AMP		1
VIII	Operational amplifier stages , Equivalent circuit of operational amplifier		1
	Open loop OP-AMP configuration , OPAMP with fed back		1
	Inverting OP-AMP		1
	RIVISION		1
VIII	Non inverting OP-AMP , Voltage follower & buffer8.9 Differential amplifier , Adder or summing amplifier , Sub tractor		1
	Integrator . Differentiator , Comparator		1

Total class=49