

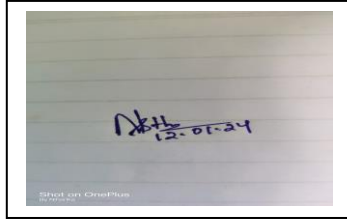
LESSON PLAN

TH2.ANALOG ELECTRONICS AND OP-AMP

WEEK	CLASS PER WEEK (4)	BY: Niharika Sethy. Lect. ETC, 4TH SEM ELECTRICAL FROM: 16.01.2024 TO 26.04.2024
		TOPICS TO BE COVERED
1	1	P-N Junction Diode , Working of Diode, V-I characteristic of PN junction Diode
	2	DC load line Important terms such as Ideal Diode , Knee voltage , junctions breakdown,
	3	Zener breakdown, Avalanche breakdown, ,
	4	P-N Diode clipping Circuit
2	5	P-N Diode clipping Circuit
		P-N Diode clamping Circuit
	6	P-N Diode clamping Circuit
		Thermistors,
	7	Sensors & barretters
	8	Zener Diode
3	9	PIN Diode
	10	Tunnel Diode
		Classification of rectifiers
	11	Analysis of half wave, calculate dc output current and voltage , RMS output current and voltage, Rectifier efficiency
	12	Analysis Of full wave centre tapped and Bridge rectifiers and calculate dc output current and voltage , RMS output current and voltage, Rectifier efficiency
4	13	Calculate Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage of HW and FW rectifiers.
	14	DC output current and voltage, RMS output current and voltage, Rectifier efficiency
	15	Full wave centre tapped and Bridge rectifiers and calculate: Ripple factor, Regulation, Transformer utilization factor, Peak inverse voltage
	16	Filters: Shunt capacitor filter , Choke input filter, π filter
5	17	Principle of Bipolar junction transistor, Current components in a transistor,
	18	Different modes of operation of transistor
	19	Transistor as an amplifier
	20	Transistor circuit configuration & its characteristics, CB Configuration, CE Configuration, CC Configuration

6	21	Transistor circuit configuration & its characteristics, CB Configuration, CE Configuration, CC Configuration
	22	Transistor Load line.
	23	Stabilization, Stability factor
	24	Need of Transistors Biasing
7	25	Different method of Transistors Biasing, Base resistor method, Collector to base bias
	26	Self bias or voltage divider method
	27	Practical circuit of transistor amplifier DC load line and DC equivalent circuit, AC load line and AC equivalent circuit
	28	Practical circuit of transistor amplifier DC load line and DC equivalent circuit, AC load line and AC equivalent circuit
8	29	Calculation of gain, Phase reversal
	30	H-parameters of transistors, Simplified H-parameters of transistors
	31	Generalized approximate model, Analysis of CB amplifier
	32	Generalized approximate model, Analysis of CE, amplifier using generalized approximate model
9	33	Generalized approximate model, Analysis of CC, amplifier using generalized approximate model Multistage transistor amplifier, R.C. coupled amplifier, Transformer coupled amplifier
	34	Feedback in amplifier, General theory of feedback
	35	Negative feedback circuit, Advantage of negative feedback
	36	Power amplifier and its classification Difference between voltage amplifier and power amplifier
10	37	Transformer coupled class A power amplifier
	38	Class A push-pull amplifier
	39	Class B push-pull amplifier
	40	Oscillators, Types of oscillators, Essentials of transistor oscillator Principle of operation of tuned collector,
11	41	Hartley, Colpitt oscillator
	42	Phase shift, Wein-bridge oscillator (no mathematical derivations)
	43	Advantages of FET over BJT, Principle of operation of FET Classification of FET
	44	FET parameters (no mathematical derivation),
12	45	DC drain resistance, AC drain resistance, Trans-conductance
	46	Biasing of FET
	47	Biasing of FET
	48	General circuit simple of OP-AMP and IC-CA-741 OPAMP, Operational amplifier stages
13	49	Equivalent circuit of operational amplifier, Open-loop OP-AMP configuration
	50	OPAMP with feedback

	51	Inverting OP-AMP ,
	52	Non inverting OP-AMP
14	53	Voltage follower& buffer
	54	Differential amplifier
	55	Adder or summing amplifier
	56	Subtract or , Integrator
15	57	Differentiator
	58	Comparator
	59	QUESTION AND ANSWER DISCUSSION (Semester and question bank)
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Sl.No	Nameof Authors	TitleoftheBook	Name ofthepublisher
1	Sanjeev Gupta	Electronic Devicesand Circuits	DhanpatRai Publications