

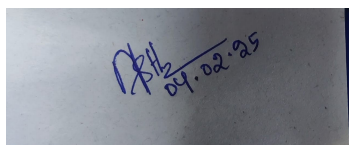
LESSON PLAN

TH2.ANALOGELECTRONICSANDOP-AMP

WEEK	CLASS PER WEEK (4)	BY:NiharikaSethy. Lect. ETC, 4TH SEM ELECTRICAL FROM 04.02.2025 TO 17.05.2025
		TOPICS TO BE COVERED
1	1	P-N Junction Diode , WorkingofDiode, V-I characteristic of PN junction Diode
	2	DCloadline Importanttermssuchas Ideal Diode,Kneevoltage , junctionsbreakdown,
	3	Zener breakdown, Avalanche breakdown, ,
	4	P-NDiodeclippingCircuit
2	5	P-NDiodeclippingCircuit
		P-NDiodeclamping Circuit
	6	P-NDiodeclamping Circuit
		Thermistors,
	7	Sensors &barretters
	8	Zener Diode
3	9	PIN Diode
	10	Tunnel Diode
		Classificationofrectifiers
	11	Analysisofhalfwave, calculate dcoutputcurrent andvoltage , RMSoutputcurrentand voltage, Rectifierefficiency
	12	AnalysisOf fullwavecentertappedandBridgerectifiersand calculate dcoutputcurrent andvoltage, RMSoutputcurrentand voltage, Rectifierefficiency
4	13	CalculateRipplefactor, Regulation, Transformerutilizationfactor, Peak inversevoltage of HW and FW rectifiers.
	14	DCoutputcurrentand voltage, RMSoutputcurrent and voltage, Rectifierefficiency
	15	FullwavecentertappedandBridgerectifiersandcalculate: Ripplefactor, Regulation, Transformerutilizationfactor, Peak inversevoltage
	16	Filters: Shuntcapacitorfilter ,Chokeinput filter, π filter
5	17	PrincipleofBipolarjunctiontransistor, Current components inatransistor,
	18	Differentmodesofoperation oftransistor
	19	Transistorasanamplifier
	20	Transistorcircuit configuration&itscharacteristics, CBConfiguration, CEConfiguration, CCConfiguration
6	21	Transistorcircuit configuration&itscharacteristics, CBConfiguration, CEConfiguration, CCConfiguration
	22	TransistorLoad 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, Colpitts 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 circuits simple of OP-AMP and IC-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)
	60	QUESTION AND ANSWER DISCUSSION(Semester and question bank)



Sl.No	Name of Authors	Title of the Book	Name of the publisher
1	Sanjeev Gupta	Electronic Devices and Circuits	Dhanpat Rai Publications