

GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING, BERHAMPUR
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
LESSON PLAN FOR THE SESSION 2023-24

SUBJECT- ANALOG ELECTRONICS & LINEAR IC(TH-4)
NAME OF THE FACULTY-MR.BALAKRUSHNA MISHRO

BRANCH-E&TC
SEMESTER-4TH

MODULE	DATE	LECTURE NO.	TOPIC TO BE COVERED
1	16/01/2024	1	<u>DIODE, TRANSISTOR AND CIRCUIT</u> Working principle of Diode & its current equation, Specification and use of p-n junction diode.
	17/01/2024	2	Breakdown of diode (Avlanche & Zener Breakdown) and Construction, working
	18/01/2024	3	V-I characteristics of PN junction Diode.
	18/01/2024	4	Classification of rectifiers-explain the operation of half wave rectifier.
	19/01/2024	5	<ul style="list-style-type: none"> Derive its DC output current and voltage, RMS output current & voltage, rectifier efficiency Derive –regulation, transformer utilization factor, ripple factor and PIV of half wave rectifier.
	22/01/2024	6	<ul style="list-style-type: none"> Explain the operation of full wave centre tapped & bridge rectifier. Derive it's DC output current and voltage, RMS output current and voltage, Rectifier efficiency
	24/01/2024	7	Derive:-Regulation, Transformer utilization factor, ripple factor and Peak inverse voltage of centre tapped & bridge full wave rectifier
	25/01/2024	8	Working of NPN & PNP transistor.
	29/01/2024	9	Explain the CB connection of transistor configuration with its input and output characteristics.
	30/01/2024	10	Explain the CE connection of transistor configuration with its input and output characteristics.
	31/01/2024	11	Explain the CC connection of transistor configuration with its input and output characteristics.
	01/02/2024	12	Define ALPHA, BETA, GAMMA & derive relationship between them.
	01/02/2024	13	Transistor biasing, its necessity, different types of transistor biasing, stabilization and stability factor
	02/02/2024	14	Derive output current and voltages for fixed biasing. Solve numerical related to it.

	05/02/2024	15	Derive output current and voltages for emitter stabilized biasing. Solve numerical related to it.
	06/02/2024	16	Derive output current and voltages for voltage divider biasing. Solve numerical related to it.
	07/02/2024	17	h- Parameter model of BJT , Load line analysis & determine the Q-point
	08/02/2024	18	Types of Coupling , Working principle & use of RC coupled amplifier.
	08/02/2024	19	Frequency response of RC coupled amplifier & draw the curve
2	09/02/2024	20	<u>AUDIO POWER AMPLIFIERS</u> Classify Power Amplifier & Differentiate between voltage & Power Amplifier
	12/02/2024	21	Working Principle of Class A & Class B power amplifier
	13/02/2024	22	Working Principle of Class AB, Class C & Class D power amplifier
	15/02/2024	23	Construction working principle & advantage of Push-Pull (Class B) amplifier.
3	15/02/2024	24	<u>FIELD EFFECT TRANSISTOR</u> FET , Its Classification & differentiate between FET & BJT
	16/02/2024	25	Construction, Working principle & characteristics of JFET
	19/02/2024	26	<u>PERFORMANCE TEST</u>
	20/02/2024	27	<ul style="list-style-type: none"> Explain JFET as an amplifier. Parameters of JFET & Establish relation among JFET parameter.
	21/02/2024	28	Construction, Working principle of MOSFET& Its classification
	22/02/2024	29	Characteristics (Drain& Transfer) of MOSFET
	22/02/2024	30	Explain operation of CMOS
4	23/02/2024	31	<u>FEEDBACK AMPLIFIER & OSCILLATOR</u> Define & classify feedback amplifier, Principle of negative feedback & types of feedback
	26/02/2024	32	Types of negative feedback voltage shunt & voltage series
	27/02/2024	33	Current shunt & current series
	28/02/2024	34	Oscillator- Block diagram , types requirement & Barkhausen Criterion
	29/02/2024	35	Principle of operation of RC phase shift Oscillator

	29/02/2024	36	Principle of operation of Crystal oscillator
	01/03/2024	37	<ul style="list-style-type: none"> Principle of operation of LC Oscillator (Hartley & Colpitts) Principle of operation of Wien Bridge oscillator
5	04/03/2024	38	<u>TUNED AMPLIFIER & OSCILLATOR</u> Define & classify tuned amplifier.
	06/03/2024	39	Explain parallel resonance circuit , Resonance Curve & sharpness of Resonance
	07/03/2024	40	Working principle of single tuned voltage amplifier & its limitation
	07/03/2024	41	Working principle of double tuned voltage amplifier & its limitation
	11/03/2024	42	Different type of non linear circuit: - Series clipper-Unbiased & biased
	12/03/2024		Shunt clipper-Unbiased & biased
	13/03/2024	43	Combinational clipper circuit and its application
	14/03/2024	44	Different type of clamper circuit:- positive clamper & its application
	14/03/2024		Different type of clamper circuit:- negative clamper & its application
	15/03/2024	45	Working of Astable multivibrator
	18/03/2024	46	Working of Mono & Bistable Multivibrator
	19/03/2024	47	Working of Integrator circuit using RC circuit & its use
	20/03/2024		Working of Differentiator circuit using RC circuit.
	21/03/2024	48	CLASS TEST-1
6	21/03/2024	49	<u>OPERATIONAL AMPLIFIER CIRCUITS & FEEDBACK CONFIGURATIONS</u> Differential amplifier explain its configuration & its significance
	22/03/2024	50	<ul style="list-style-type: none"> Block diagram representation of OPAMP Equivalent circuit of OPAMP & draw the schematic symbol
	27/03/2024	51	Discuss the types of integrated circuits manufacturer's designations of ICs, Package type , Pin identification.
	28/03/2024	52	Define the following electrical characteristics input offset voltage & input offset current.
	28/03/2024	53	Define CMRR & slew rate
	30/03/2024	54	Draw and explain open loop configuration of Inverting amplifier
	02/04/2024	55	Draw and explain open loop configuration of Non Inverting amplifier

	03/04/2024	56	Draw the circuit diagram of the voltage series feedback amplifier & derive the close loop voltage gain
	04/04/2024	57	Gain of feedback circuits input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
	04/04/2024	58	Draw the circuit diagram of the voltage shunt feedback amplifier and derive the close loop, Voltage gain, gain of feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
7	05/04/2024	59	<u>APPLICATION OF OPERATIONAL AMPLIFIER, TIMER CIRCUIT & IC VOLTAGE REGULATOR</u> Discuss the summing scaling and averaging of inverting amplifier
	06/04/2024		Discuss the summing scaling and averaging of non inverting amplifier.
	08/04/2024	60	DC & AC Amplifies using OP-AMP.
	09/04/2024	61	Integrator using OP-AMP
	10/04/2024	62	Differentiator using OP-AMP
	12/04/2024	63	Active filter and describe the filter design of fast order low Pass Butterworth
	13/04/2024	64	Concept of Zero-Crossing Detector using Op-Amp
	15/04/2024	65	Block diagram and operation of IC 555 timer
	16/04/2024	66	IC 565 PLL & its application
	18/04/2024	67	Working of Current to voltage Convertor using Operational Amplifier
	18/04/2024	68	Working of the Voltage to Frequency Convertor using Operational Amplifier
	19/04/2024	69	Working of the Frequency to Voltage Conversion using Operational Amplifier
	22/04/2024	70	Operation of power supply using 78XX and 79XX, LM 317 Series with their PIN configuration
	23/04/2024	71	Functional block diagram & Working of IC regulator LM 723 & LM 317.
	24/04/2024	72	Numerical solved
	25/04/2024	73	CLASS TEST-2
	25/04/2024	74	MCQ TEST

	25/04/2024	75	Previous year semester question discussion
<div data-bbox="142 256 548 390" data-label="Text"> </div> <div data-bbox="110 390 568 428" data-label="Text"> <p>SIGNATURE OF FACULTY MEMBER</p> </div> <div data-bbox="1027 237 1268 390" data-label="Text"> </div> <div data-bbox="948 390 1383 428" data-label="Text"> <p>COUNTER SIGNATURE OF H.O.D.</p> </div>			