

GOVERNMENT POLYTECHNIC, DHENKANAL
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGG.
LESSON PLAN SUMMER 2025

Subject:- Analog Electronics & Linear IC (Th. 4)	No of Days/per Week Class Allotted :- 5	Semester From:- :- 04.02.2025 To:- 17.05.2025 Name of the Faculty: Alshwarya Dash
Week	Class Day	Theory
1st	1 st	Working principle, of Diode & its current equation, Specification and use of
	2 nd	Breakdown of diode (Avalanche & Zener Breakdown) and Construction,
	3 rd	Classification of Rectifiers and working of different types of Rectifiers- Half-Wave Rectifier,
	4 th	, Full-Wave Rectifier (CT & BRIDGE type)
	5 th	Working principle of p-n-p and n-p-n transistor, different types of transistor
2nd	1 st	input and output characteristics of transistor in different connections.
	2 nd	Define ALPHA, BETA and GAMMA of transistors in various modes.
	3 rd	Basic concept of Biasing, Types of Biasing, h-parameter model of BJT, load
	4 th	Types of Coupling, working principle and use of R-C Coupled Amplifier
	5 th	Frequency Responses of R-C coupled Amplifier & draw the curve.
3rd	1 st	Classify Power Amplifier & Differentiate between Voltage and Power Amplifier
	2 nd	Working principle of different types of Power Amplifier (Class-A)
	3 rd	Working principle of different types of Power Amplifier (Class-B)
	4 th	Working principle of different types of Power Amplifier (Class -AB)
	5 th	Working principle of different types of Power Amplifier (Class-C)
4th	1 st	Working principle of different types of Power Amplifier (Class-D)
	2 nd	Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
	3 rd	Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
	4 th	FET & its classifications.
	5 th	Differentiate between JFET & BJT
5th	1 st	Construction, working principle & characteristics of JEFT
	2 nd	Explain JEFT as an amplifier, parameters of JFET
	3 rd	Establish relation among JFET parameters
	4 th	Construction & working principle MOSFET & its classification
	5 th	& characteristics of MOSFET (Drain & Transfer)
6th	1 st	Explain the operation of CMOS
	2 nd	Explain the operation of VMOS
	3 rd	Explain the operation of LDMOS
	4 th	Define & classify Feedback Amplifier, principle of negative feedback with the help of block diagram,
	5 th	Types of feedback – negative & positive feedback
7th	1 st	Types of negative feedback – voltage shunt, voltage series,
	2 nd	current shunt & current series and characteristics voltage gain, bandwidth , input Impedance output impedance,
	3 rd	stability, noise , distortion in amplifiers
	4 th	Oscillator -block diagram of sine wave oscillator ,Types Requirement of oscillation Barkhausen criterion

	5 th	RC oscillators – RC phase shift ,Crystal, LC oscillators – Colpitts
8th	1 st	Hartley & Wien Bridge Oscillators :Circuit operation, circuit diagram equation for frequency of oscillation & frequency stability
	2 nd	Defined and classify Tuned amplifier, Explain parallel Resonant circuit,.
	3 rd	Resonance Curve & sharpness of Resonance
	4 th	working principle of Single tuned Voltage& Double tuned Amplifier & its limitation
	5 th	Different type of Non-linear circuits - Clipper,
9th	1 st	diode series & shunt, positive& negative biased
	2 nd	unbiased and combinational clipper clippers circuit & its application.
	3 rd	Different type of Clamper circuit (positive & negative clampers) & its
	4 th	Working of Astable, Monostable
	5 th	Monostable Multivibrator with circuit diagram
10th	1 st	Bistable Multivibrator with circuit diagram
	2 nd	Differential amplifier & explain its configuration & significance.
	3 rd	Block diagram representation of a typical Op- Amp
	4 th	its equivalent circuits and draw the schematic symbol
	5 th	Discuss the types of integrated circuits manufacturer's designations of ICs, pin identification and temperature and ordering information.
11th	1 st	Define the following electrical characteristics input offset voltage, input offset current, CMMR, Large signal voltage gain, Slew rate
	2 nd	Draw and explain the Open Loop configuration (inverting, non-inverting
	3 rd	Draw the circuit diagram of the voltage series feedback amplifier and derive the close loop Voltage gain,
	4 th	gain of feedback circuits input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
	5 th	Draw the circuit diagram of the voltage shunt feedback amplifier
12th	1 st	derive the close loop, Voltage gain,
	2 nd	gain of feedback circuits and input resistance
	3 rd	gain of feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback
	4 th	Discuss the summing scaling and averaging of inverting and non-inverting
	5 th	DC & AC Amplifies using OP-AMP
13th	1 st	Integrator using op-amp
	2 nd	differentiator using op-amp
	3 rd	Active filter and describe the filter design of fast order low Pass Butterworth
	4 th	
	5 th	
14th	1 st	Concept of Zero-Crossing Detector using Op-Amp
	2 nd	
	3 rd	Block diagram and operation of IC 555 timer
	4 th	IC 565 PLL & its applications
	5 th	Working of Current to voltage Convertor using Operational Amplifier
15th	1 st	Working of the Voltage to Frequency Convertor using Operational
	2 nd	Working of the Frequency to Voltage Conversion using Operational Amplifier
	3 rd	Operation of power supply using 78XX
	4 th	Operation of power supply using 79XX
	5 th	Operation of power supply using LM 317

Signature of Faculty
31.01.2024

Signature of HOD
31/01/24