

PSIET, KARANDA, DHENKANAL

LESSON PLAN Session (2022-2023)

Discipline : Electronics & Telecommunication Engineering	Semester: 4 th , Summer/2022	Name of the Teaching Faculty: Priyabrata Pradhan Lecturer
Subject: AE&LI Theory: 4	No. Of Days/Week Class Allotted: 5	Semester From Date: 15/02/2023 To Date: 23/05/2023 No. Of Weeks: 15 weeks
Week	Class Day	Theory/Practical Topics
1st	1st	Working principle, of Diode & its current equation, Specification and use of p-n junction diode.
	2nd	Breakdown of diode (Avalanche & Zener Breakdown) and construction, working, characteristics
	3rd	Classification of Rectifiers and working of different types of Rectifiers - Half-Wave Rectifier.
	4th	Full-wave Rectifier (Centre Tapped & BRIDGE type)
	5th	Working principle of p-n-p and n-p-n transistor, different types of transistor connection (CB, CE and CC).
2nd	1st	Input and output characteristics of transistor in different connections. Define ALPHA, BETA and GAMMA of transistors in various modes
	2nd	Establish the mathematical relationship between them. Basing concept of biasing, Types of Biasing, h-parameter model of BJT, load line (AC & DC) and determine the Q-point.
	3rd	Types of coupling, working principle and use of R-C coupled Amplifier & Frequency Responses of R-C coupled Amplifier & draw the curve.

	4th	Classify power Amplifier & Differentiate between Voltage and Power Amplifier.
	5th	REVISION
3rd	1st	Working principle of different types of Power Amplifier (Class-A, CLASS-AB, CLASS-B and CLASS-C & CLASS-D Amplifier).
	2nd	Construction and working principle and advantages of Push Pull (Class-B) Amplifier.
	3rd	FET & its classification & Differentiate between JFET & BJT.
	4th	QUIZE
	5th	Construction, working principle & characteristics of JFET
4th	1st	Explain JFET as an amplifier, parameters of JFET & Establish relation among JFET parameters.
	2nd	Construction & Working principle MOSFET & its classification & characteristics (Drain & Transfer)
	3rd	Explain the operation of CMOS, VMOS & LDMOS. Define & classify Feedback Amplifier, principle of negative feedback with the help of block diagram, Types of feedback – negative & positive feedback.
	4th	Types of negative feedback – voltage shunt, voltage series, current shunt & current series and characteristics voltage gain, bandwidth, input impedance output impedance, stability, noise, distortion in amplifiers.
	5th	REVISION
5th	1st	ASSIGNMENT CHECK
	2nd	Oscillator – block diagram of sine wave Oscillator,
		Types Requirement of Oscillation – Barkhausen criterion.

	3 rd	RC oscillator – RC phase shift , Crystal, LC oscillators- Colpits , Hartley & when Bridge Oscillators: circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability.
	4 th	Define and classify Tuned amplifier, Explain parallel Resonant circuit , Resonance Curve & sharpness of Resonance.
	5 th	Working principle of single tuned Voltage & Double tuned Amplifier & its limitation.
6 th	1 st	Different type of Non-linear circuits – Clipper, diode series & shunt , positive and negative biased and combinational clippers circuit & its application.
	2 nd	Different types of clamper circuit (positive & negative clampers) & its application.
	3 rd	REVISION
	4 th	TEST
	5 th	Working of Astable, Monostable & Biastable Multivibrator with circuit diagram.
7 th	1 st	Working use of Integrator and Differentiator circuit using R-C circuit (Linear), input/output waveforms & frequency response.
	2 nd	Differential amplifier & explain its configuration & significance.
	3 rd	Block diagram representation of a typical Op-Amp, its equivalent circuits and draw the schematic symbol
	4 th	. Discuss the types of integrated circuits manufactures designations of Ics, Package types, pin identification and temperature and ordering information.
	5 th	Define the following electrical characteristics input offset voltage, input offset current, CMMR, Large signal voltage gain, Slew rate.
8 th	1 st	Draw & explain the Open Loop configuration (Inverting, non-inverting Amplifier).

	2 nd	Draw the circuit diagram of the voltage series feedback amplifier and derive the close loop Voltage gain, gain of feedback circuits input resistance , and output resistance, bandwidth and total output offset voltage with feedback
	3 rd	. feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
	4 th	QUIZE
	5 th	REVISION
9 th	1 st	Concept of Zero-Crossing Detector using Op-Amp.
	2 nd	Block diagram and operation of IC 555 timer & IC 565 PLL & its applications
	3 rd	. Working of current to voltage converter using operational Amplifier.
	4 th	Working of the Voltage to frequency Converter using Operational Amplifier.
	5 th	Working of the frequency to Voltage Conversion using Operational Amplifier.
10 th	1 st	Operation of power supply using 78XX and 79XX, LM317 Series with their PIN configuration.
	2 nd	Functional block diagram & Working of Regulator LM 317.
	3 rd	ASSIGNMENT CHECK
	4 th	REVISION
	5 th	TEST

Prayabrita Pradhan
Signature of the faculty

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15/12/2023
Signature of the Principal