ACADEMIC SESSION : 2023-24

Discipline : Electrical	**Semester : 4th**	**Name of the Teaching Faculty : Tilu Behera (Lecturer in Electronics)**
Subject : Analog Electronics and OP-AMP	No. of days / week class allotted	Semester From date: 16/01/2024 To 26/04/2024 Nos. of Weeks per semester : 15
Week	**Class Day**	**Theory/ Practical Topics**
1ST	1st	P-N Junction Diode
	2nd	Working of Diode
	3rd	V-I characteristic of PN junction Diode..
	4th	DC load line
2ND	1st	Important terms such as Ideal Diode, Knee voltage
	2nd	Junctions break down.
	3rd	P-N Diode clipping Circuit.
	4th	P-N Diode clamping Circuit
3RD	1st	Thermistors, Sensors &barretters
	2nd	Zener Diode
	3rd	Tunnel Diode
	4th	PIN Diode
4TH	1st	Classification of rectifiers
	2nd	Analysis of half wave, full wave centre tapped and Bridge rectifiers
	3rd	DC output current and voltage
	4th	RMS output current and voltage
5TH	1st	Rectifier efficiency, Ripple factor
	2nd	Regulation, Transformer utilization factor, Peak inverse voltage
	3rd	Shunt capacitor filter , Choke input filter ,π filter
	4th	Principle of Bipolar junction transistor
6TH	1st	Different modes of operation of transistor
	2nd	Current components in a transistor
	3rd	Transistor as an amplifier
	4th	Transistor circuit configuration & its characteristics
7TH	1st	CB Configuration , CE Configuration , CC Configuration
	2nd	Transistor biasing
	3rd	Stabilization
	4th	Stability factor
8TH	1st	Different method of Transistors Biasing
	2nd	Base resistor method, Collector to base bias , Self bias or voltage divider method
	3rd	Practical circuit of transistor amplifier
	4th	DC load line and DC equivalent circuit
9TH	1st	AC load line and AC equivalent circuit
	2nd	Calculation of gain ,Phase reversal
	3rd	H-parameters of transistors
	4th	Simplified H-parameters of transistors

10TH	1st	Generalized approximate model
	2nd	Analysis of CB, CE, CC amplifier using generalized approximate model
	3rd	Computation of Gain margin and phase margin.
	4th	Multi stage transistor amplifier , R.C. coupled amplifier , Transformer coupled amplifier
11TH	1st	Feed back in amplifier , General theory of feed back
	2nd	Negative feedback circuit , Advantage of negative feed back
	3rd	Power amplifier and its classification
	4th	Difference between voltage amplifier and power amplifier
12th	1st	Transformer coupled class A power amplifier , Class A push – pull amplifier , Class B push – pull amplifier
	2nd	Oscillators , Types of oscillators , Essentials of transistor oscillator
	3rd	Principle of operation of tuned collector, Hartley, colpitt, phase shift, weinbridge oscillator
	4th	Classification of FET ,Advantages of FET over BJT
13th	1st	Principle of operation of BJT
	2nd	FET parameters , drain resistance , AC drain resistance , Trans-conductance
	3rd	Biasing of FET
	4th	General circuit simple of OP-AMP and IC – CA – 741 OP AMP
14th	1st	Operational amplifier stages
	2nd	Equivalent circuit of operational amplifier
	3rd	Open loop OP-AMP configuration.
	4th	OPAMP with fed back
15th	1st	Inverting OP-AMP , Non inverting OP-AMP.
	2nd	Voltage follower & buffer.
	3rd	Adder or summing amplifier , Sub tractor.
	4th	Integrator , Differentiator , Comparator.

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Prepared By
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