SYNERGY SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING

Discipline :Electrical Engineering	Semester:- 4th sem	Name of the teaching faculty:- PRAJNAPARAMITA KABI
Subject:- Analog electronics and op-amp	No. of Days/week class Allotted:-4	No. of weeks:-15 SESSION-2024-2025SUMMER
No. of week	**No. of class**	**Topic to be Taught**
1st	1st	Introduction class
	2nd	P-N Junction Diode 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	Important terms such as Ideal Diode, Knee voltage . Junctions break down. Zener breakdown Avalanche breakdown
	3rd	P-N Diode clipping Circuit. P-N Diode clamping Circuit
	4th	Thermistors,
3rd	1st	Sensors & barrettes
	2nd	Zener Diode
	3rd	Tunnel Diode
	4th	PIN Diode
4th	1st	Classification of rectifiers
	2nd	Analysis of half waverectifiersand calculate
	3rd	full wave centre tapped and Bridge rectifiers and calculate:
	4th	DC output current and voltage RMS output current and voltage Rectifier efficiency
5th	1st	Ripple factor Regulation Transformer utilization factor Peak inverse voltage
	2nd	Shunt capacitor filter Choke input filter
	3rd	Choke input filter and π filter
	4th	Principle of Bipolar junction transistor
6th	1st	Principle of Bipolar junction transistor
	2nd	Different modes of operation of transistor
	3rd	Current components in a transistor
	4th	Transistor Transistor as an amplifer
7th	1st	Transistor circuit configuration & its characteristics
	2nd	CB Configuration CE Configuration CC Configuration
	3rd	Transistor biasing
	4th	Transistor biasing Stabilization

8th	1st	Stability factor
	2nd	Different method of Transistors Biasing
	3rd	Base resistor method
	4th	Collector to base bias
9th	1st	Self bias or voltage divider method
	2nd	transistor amplifier
	3rd	DC load line and DC equivalent circuit
	4th	AC load line and AC equivalent circuit
10th	1st	Calculation of gain
	2nd	Phase reversal
	3rd	H-parameters of transistors
	4th	Simplified H-parameters of transistors
11th	1st	Generalised approximate model
	2nd	Analysis of CB, CE, CC amplifier using generalised approximate model
	3rd	Multi stage transistor amplifier
	4th	Feed back in amplifie
12th	1st	Power amplifier and its classification
	2nd	Oscillators Types of oscillators
	3rd	Classification of FET
	4th	Advantages of FET over BJT
13th	1st	Principle of operation of BJT
	2nd	FET parameters (no mathematical derivation)
	3rd	DC drain resistance
	4th	AC drain resistance Trans-conductance
14th	1st	General circuit simple of OP-AMP and IC – CA – 741 OP AMP
	2nd	Operational amplifier stages
	3rd	Equivalent circuit of operational amplifier
	4th	pen loop OP-AMP configuration
15th	1st	OPAMP with fed back
	2nd	Inverting OP-AMP
	3rd	Non inverting OP-AMP Voltage follower & buffer
	4th	Differential amplifier Adder or summing amplifie
	5th	Integrator Differentiator Comparator

Signature of the faculty

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