

Discipline :- ELECTRICAL	Semester:- 4TH	Name of the Teaching Faculty:- Jyotirmaya samal
Subject:- ANALOG ELECTRONICS AND OP-AMP (TH-02)	No of Days/per Week Class Allotted :- 04	Semester From:- 10-03-2022 To:- 30-06-2022
Week	Class Day	Theory
1 st	1 st	Introduction to semiconductor and its Application
	2 nd	P-N Junction Diode and its working
	3 rd	V-I characteristic of PN junction Diode.
	4 th	DC load line
2 nd	1 st	Important terms such as Ideal Diode, Knee voltage
	2 nd	Junctions break down(Zener breakdown and Avalanche breakdown)
	3 rd	P-N Diode clipping and Diode clamping Circuit.
	4 th	SPECIAL SEMICONDUCTOR DEVICES: Thermistors , Sensors & barretters
3 rd	1 st	Zener Diode and Tunnel Diode
	2 nd	PIN Diode
	3 rd	OPERATIONAL AMPLIFIERS: General circuit simple of OP-AMP and IC – CA – 741 OP-AMP
	4 th	Operational amplifier stages
4 th	1 st	Equivalent circuit of operational amplifier
	2 nd	Open loop OP-AMP configuration and OPAMP with feed back
	3 rd	Inverting OP-AMP and Non inverting OP-AMP
	4 th	Voltage follower & buffer
5 th	1 st	Differential amplifier
	2 nd	Adder or summing amplifier
	3 rd	Sub tractor , integrator , differentiator and comparator
	4 th	FIELD EFFECT TRANSISTOR Classification of FET Advantages of FET over BJT and Principle of operation of BJT
6 th	1 st	FET parameters
	2 nd	DC drain resistance, AC drain resistance, Trans-conductance
	3 rd	Biasing of FET
	4 th	RECTIFIER CIRCUITS & FILTERS: Classification of rectifiers
7 th	1 st	Analysis of half wave, full wave ,centre tapped
	2 nd	Bridge rectifiers and calculate
	3 rd	DC output current and voltage
	4 th	RMS output current and voltage
8 th	1 st	Rectifier efficiency and Ripple factor
	2 nd	Regulation
	3 rd	Transformer utilization factor
	4 th	Peak inverse voltage
9 th	1 st	Filters
	2 nd	Shunt capacitor filter
	3 rd	Choke input filter
	4 th	π filter
10 th	1 st	TRANSISTORS: Principle of Bipolar junction transistor
	2 nd	Different modes of operation of transistor
	3 rd	Current components in a transistor
	4 th	Transistor as an amplifier

11 th	1 st	Transistor circuit configuration & its characteristics
	2 nd	CB CE CC Configuration
	3 rd	TRANSISTOR CIRCUITS : Transistor biasing
	4 th	Stabilization and Stability factor
12 th	1 st	Different method of Transistors Biasing
	2 nd	Base resistor method
	3 rd	Collector to base bias
	4 th	Self bias or voltage divider method
13 th	1 st	TRANSISTOR AMPLIFIERS & OSCILLATORS Practical circuit of transistor amplifier, DC load line and DC equivalent circuit
	2 nd	AC load line and AC equivalent circuit, Calculation of gain, Phase reversal
	3 rd	H-parameters of transistors
	4 th	Simplified H-parameters of transistors
14 th	1 st	Generalised approximate model
	2 nd	Analysis of CB,CE,CC amplifier using generalised approximate model, Multi stage transistor amplifier
	3 rd	R.C. coupled amplifier and Transformer coupled amplifier
	4 th	Feed back in amplifier
15 th	1 st	General theory of feed back
	2 nd	Negative feedback circuit
	3 rd	Advantage of negative feed back
	4 th	Power amplifier and its classification
16 th	1 st	Difference between voltage amplifier and power amplifier
	2 nd	Transformer coupled class A power amplifier
	3 rd	Class A push – pull amplifier
	4 th	Class B push – pull amplifier
17 th	1 st	Types of oscillators and Essentials of transistor oscillator, Principle of operation of tuned collector, Hartley, colpitt, phase shift, wein-bridge oscillator
	2 nd	Doubt Clearing Classes and Revision of Syllabus
	3 rd	Previous Five (05) Years Semester Question Answer
	4 th	Discussion

