Discipline :- ETC	Semester:- 4th	Name of the Teaching Faculty: - Anchal Sundar Ray
Subject:- **Analog Electronics & Linear IC (Th. 4)**	No of Days/per Week Class Allotted :- 05	Semester From:- **14.02.2023** To:- **23.05.2023**
Week	**Class Day**	**Theory**
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 (CT & 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.
	2nd	Define ALPHA, BETA and GAMMA of transistors in various modes. Establish the Mathematical relationship between them
	3rd	Basic concept of Biasing, Types of Biasing, h-parameter model of BJT, load line (AC &DC) and determine the Q-point.
	4th	Types of Coupling, working principle and use of R-C Coupled Amplifier
	5th	Frequency Responses of R-C coupled Amplifier & draw the curve.
3rd	1st	Classify Power Amplifier &Differentiate between Voltage and Power Amplifier
	2nd	Working principle of different types of Power Amplifier (Class-A)
	3rd	Working principle of different types of Power Amplifier (Class-B)
	4th	Working principle of different types of Power Amplifier (Class -AB)
	5th	Working principle of different types of Power Amplifier (Class-C)
4th	1st	Working principle of different types of Power Amplifier (Class-D)
	2nd	Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
	3rd	Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
	4th	FET & its classifications.
	5th	Differentiate between JFET & BJT
5th	1st	Construction, working principle & characteristics of JEFT
	2nd	Explain JEFT as an amplifier, parameters of JFET
	3rd	Establish relation among JFET parameters
	4th	Construction & working principle MOSFET & its classification
	5th	& characteristics of MOSFET (Drain & Transfer)
6th	1st	Explain the operation of CMOS
	2nd	Explain the operation of VMOS
	3rd	Explain the operation of LDMOS
	4th	Define & classify Feedback Amplifier, principle of negative feedback with the help of block diagram,
	5th	Types of feedback – negative &positive feedback.

7th	1st	Types of negative feedback – voltage shunt, voltage series,
	2nd	current shunt& current series and characteristics voltage gain, bandwidth , input Impedance output impedance,
	3rd	stability, noise , distortion in amplifiers
	4th	Oscillator -block diagram of sine wave oscillator ,Types Requirement of oscillation Barkhausen criterion
	5th	RC oscillators – RC phase shift ,Crystal, LC oscillators – Colpitts
8th	1st	Hartley & Wien Bridge Oscillators :Circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability
	2nd	Defined and classify Tuned amplifier, Explain parallel Resonant circuit,.
	3rd	Resonance Curve & sharpness of Resonance
	4th	working principle of Single tuned Voltage& Double tuned Amplifier & its limitation
	5th	Different type of Non-linear circuits - Clipper,
9th	1st	diode series &shunt, positive& negative biased
	2nd	unbiased and combinational clipper clippers circuit & its application.
	3rd	Different type of Clamper circuit (positive & negative clampers) & its application
	4th	Working of Astable, Monostable
	5th	Monostable Multivibrator with circuit diagram
10th	1st	Bistable Multivibrator with circuit diagram
	2nd	Differential amplifier & explain its configuration &significance.
	3rd	Block diagram representation of a typical Op- Amp
	4th	its equivalent circuits and draw the schematic symbol
	5th	Discuss the types of integrated circuits manufacturer's designations of ICs, Package types
11th	1st	pin identification and temperature and ordering information.
	2nd	Define the following electrical characteristics input offset voltag
	3rd	input offset current, CMMR, Large signal voltage gain, Slew rate
	4th	Draw and explain the Open Loop configuration (inverting, non-inverting Amplifier)
	5th	Draw the circuit diagram of the voltage series feedback amplifi and derive the close loop Voltage gain,
12th	1st	gain of feedback circuits input resistance, and output resistanc bandwidth and total output offset voltage with feedback.
	2nd	Draw the circuit diagram of the voltage shunt feedback amplifi
	3rd	derive the close loop, Voltage gain,
	4th	gain of feedback circuits and input resistance
	5th	gain of feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback
13th	1st	Discuss the summing scaling and averaging of inverting and non-inverting amplifiers diagram & Working of IC regulator LM 723 & LM 317
	2nd	DC & AC Amplifies using OP-AMP
	3rd	Integrator using op-amp
	4th	differentiator using op-amp
	5th	Active filter and describe the filter design of fast order low Pa Butterworth

14th	1st	Concept of Zero-Crossing Detector using Op-Amp
	2nd	Block diagram and operation of IC 555 timer
	3rd	IC 565 PLL & its applications
	4th	Working of Current to voltage Convertor using Operational Amplifier
	5th	Working of the Voltage to Frequency Convertor using Operational Amplifier
15th	1st	Working of the Voltage to Frequency Convertor using Operational Amplifier
	2nd	Working of the Frequency to Voltage Conversion using Operational Amplifier
	3rd	Operation of power supply using 78XX
	4th	Operation of power supply using 79XX
	5th	Operation of power supply using LM 317

Teaching Faculty 13/02/2023

HOD, ETC 13/02/2023