ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Discipline	ELECTRICAL	Semester 4th	Name of the Teaching Faculty Er. Subhasish Mohanty.	
Subject ANALOG ELECTRONICS & OP AMP		No of Days/Week Class Allotted: 4	Semester From date: 10.3.2022 to date 18.6.2022.	No of Weeks

WEEK	Class Day	Theory Topics
1st	1st	PN Junction Diode & Working of Diode.
	2nd	V-I Characteristics of PN junction Diode, characteristic of PN junction Diode
	3rd	DC load line, Important terms such as Ideal Diode, knee voltage
	4th	Junctions break down, zener break down, Avalanche break down.
	5th	
2nd	1st	P.N. Diode clipping circuit
	2nd	P.N. Diode clamping circuit
	3rd	SPECIAL SEMI CONDUCTOR DEVICES: Thermistors.
	4th	Sensors and barretters
	5th	
3rd	1st	Zener Diode
	2nd	Tunnel Diode
	3rd	PIN Diode
	4th	RECTIFIER CIRCUITS & FILTERS: Classification of rectifiers
	5th	

WEEK	Class Day	Theory Topics
4th	1st	Analysis of half wave, full wave centre tapped & Bridge rectifiers
	2nd	DC output current and voltage.
	3rd	RMS output current & voltage, Rectifier efficiency
	4th	Ripple factor, Regulation
	5th	
5th	1st	Transformer utilization factor, Peak inverse voltage
	2nd	Filters, Shunt Capacitor filter, choke input filter, π Filter
	3rd	TRANSISTORS: Principle of Bipolar junction transistor
	4th	Different modes of operation of transistor.
	5th	
7th	1st	Current components in a transistor
	2nd	Transistor as an amplifier
	3rd	Transistor circuit Configuration & its ~~Characteristics~~ Characteristics.
	4th	CB Configuration CE Configuration
	5th	

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WEEK	Class Day	Theory Topics
8th	1st	CC configuration
	2nd	TRANSISTOR CIRCUITS: Transistor biasing
	3rd	Stabilization
	4th	Stability factor
	5th	
9th	1st	Different methods of Transistors Biasing
	2nd	Base resistor method
	3rd	Collector to base bias
	4th	Self bias or voltage divider method.
	5th	
10th	1st	TRANSISTOR AMPLIFIERS & OSCILLATORS: Practical circuit of transistor, amplifier, DC load line & DC equivalent circuit
	2nd	AC load line & AC equivalent circuit, Calculation of gain
	3rd	Phase reversal H-Parameters of transistors
	4th	Simplified H-parameters of transistors
	5th	

WEEK	Class Day	Theory Topics
11th	1st	Generalized approximate model, Analysis of CB, CE, CC amplifier using generalised approximate model
	2nd	Analysis of CB, CE, CC amplifier using generalised approximate model.
	3rd	Multistage transistor amplifier R.C. coupled amplifier
	4th	Transformer Coupled amplifier
	5th	
12th	1st	Feed back in amplifier. General theory of feed back. Negative feed back circuit. Advantage of negative feed back.
	2nd	Power amplifier & its classification. Difference between voltage amplifier and power amplifier
	3rd	Transformer coupled class A power amplifier. Class A push-pull amplifier, Class-B push-pull amplifier.
	4th	Oscillators - Types of Oscillators. Essentials of transistor Oscillator
	5th	
13th	1st	Principle of operation of tuned Collector, Hartley, Colpitt, phase shift, wein bridge oscillator (no mathematical derivations)
	2nd	FIELD EFFECT TRANSISTOR : Classification of FET
	3rd	Advantages of FET over BJT
	4th	Principle of operation of BJT
	5th	

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WEEK	Class Day	Theory Topics
14th	1st	FET parameters (no mathmetical derivation) DC drain resistance
	2nd	AC drain resistance. Trans-Conductance
	3rd	Biasing of FET
	4th	PERATIONAL AMPLIFIERS: General circuit-Simple of OP-AMP. & IC-CA-741 OP AMP
	5th	
15th	1st	Operational amplifier stages. Equivalent circuit of operational amplifier
	2nd	Open loop OP-AMP Configuration
	3rd	OPAMP with fed back Inverting OP-AMP.
	4th	Non-inverting OP-AMP
	5th	
16th	1st	Voltage follower & buffer
	2nd	Differential amplifier. Adder or Summing amplifier
	3rd	Subtractor Integrator
	4th	Differential or Comparator
	5th	