



GANDHI SCHOOL OF ENGINEERING

BHABANDHA, BERHAMPUR

BRANCH:- ELECTRICAL ENGINEERING

SEMESTER:- 4th

SUBJECT:- AE

GROUP -1 &2

NAME OF FACULTY- Er. MANOJ KUMAR NAYAK & ER LALIT KUMAR NAYAK

			Topic to be taken			Actual topic taken		
SL. No	Topic/Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks
1	P-N JUNCTION DIODE	06	1. 1 P-N Junction Diode 1 . 2 Working of Diode 1 . 3 V-I characteristic of PN junction Diode 1 . 4 DC load line 1 . 5 Important terms such as Ideal Diode, Knee voltage 1 . 6 Junctions break down. 1.6.1 Zener breakdown 1.6.2 Avalanche breakdown 1 . 7 P-N Diode clipping Circuit. 1 . 8 P-N Diode clamping Circuit	18.01.2024 TO 25.01.2024	1.1 1.2 1.3 1.4 1.5 1.6 1.6.1 1.6.2 1.7 1.8	1. 1 P-N Junction Diode 1.2 Working of Diode 1 . 3 V-I characteristic of PN junction Diode 1.4 DC load line 1. 5 Important terms such as Ideal Diode, Knee voltage 1. 6 Junctions break down. 1.6.1 Zener breakdown 1.6.2 Avalanche breakdown 1 . 7 P-N Diode clipping Circuit. 1 . 8 P-N Diode clamping Circuit	18.01.2024 19.01.2024 20.01.2024 22.01.2024 24.01.2024 25.01.2024	
2	SPECIAL SEMICONDUCTOR DEVICES	05	2 . 1 Thermistors, Sensors & barretters 2 . 2 Zener Diode 2 . 3 Tunnel Diode 2 . 4 PIN Diode	31.01.2024 TO 05.02.2024	2.1 2.2 2.3 2.4	2 . 1 Thermistors, Sensors & barretters 2 . 2 Zener Diode 2 . 3 Tunnel Diode 2 . 4 PIN Diode	31.01.2024 01.02.2024 02.02.2024 03.02.2024 05.02.2024	

3	RECTIFIER CIRCUITS & FILTERS	07	3.1 Classification of rectifiers 3.2 Analysis of half wave, full wave centre tapped and Bridge rectifiers and calculate: 3.2.1 DC output current and voltage 3.2.2 RMS output current and voltage 3.2.3 Rectifier efficiency 3.2.4 Ripple factor 3.2.5 Regulation 3.2.6 Transformer utilization factor 3.2.7 Peak inverse voltage 3.3 Filters: 3.3.1 Shunt capacitor filter 3.3.2 Choke input filter 3.3.3 π filter	06.02.2024 TO 13.02.2024	3.1 3.2 3.2.1 3.2.2 3.2.3 3.2.4 3.2.5 3.2.6 3.2.7 3.3 3.3.1 3.3.2 3.3.3	3.1 Classification of rectifiers 3.2 Analysis of half wave, full wave centre tapped and Bridge rectifiers and calculate: 3.2.1 DC output current and voltage 3.2.2 RMS output current and voltage 3.2.3 Rectifier efficiency 3.2.4 Ripple factor 3.2.5 Regulation 3.2.6 Transformer utilization factor 3.2.7 Peak inverse voltage 3.3 Filters: 3.3.1 Shunt capacitor filter 3.3.2 Choke input filter 3.3.3 π filter	06.02.2024 07.02.2024 08.02.2024 09.02.2024 10.02.2024 12.02.2024 13.02.2024	
4	TRANSISTORS	07	4.1 Principle of Bipolar junction transistor 4.2 Different modes of operation of transistor 4.3 Current components in a transistor 4.4 Transistor as an amplifier 4.5 Transistor circuit configuration & its characteristics 4.5.1 CB Configuration	15.02.2024 TO 21.02.2024	4.1 4.2 4.3 4.4 4.5 4.5.1 4.5.2 4.5.3	4.1 Principle of Bipolar junction transistor 4.2 Different modes of operation of transistor 4.3 Current components in a transistor 4.4 Transistor as an amplifier 4.5 Transistor circuit configuration & its characteristics 4.5.1 CB Configuration 4.5.2 CE Configuration	15.02.2024 16.02.2024 17.02.2024 19.02.2024 20.02.2024 21.02.2024 22.02.2024	

			4.5.2 CE Configuration 4.5.3 CC Configuration			4.5.3 CC Configuration		
5	TRANSISTOR CIRCUITS	07	5.1 Transistor biasing 5.2 Stabilization 5.3 Stability factor 5.4 Different method of Transistors Biasing 5.4.1 Base resistor method 5.4.2 Collector to base bias 5.4.3 Self bias or voltage divider method	23.02.2024 TO 01.03.2024	5.1 5.2 5.3 5.4 5.4.1 5.4.2 5.4.3	5.1 Transistor biasing 5.2 Stabilization 5.3 Stability factor 5.4 Different method of Transistors Biasing 5.4.1 Base resistor method 5.4.2 Collector to base bias 5.4.3 Self bias or voltage divider method	23.02.2024 24.02.2024 26.02.2024 27.02.2024 28.02.2024 29.02.2024 01.03.2024	

6	TRANSISTOR AMPLIFIERS & OSCILLATORS	13	6.1 Practical circuit of transistor amplifier	02.03.2024 TO 20..03.2024	6.1	6.1 Practical circuit of transistor amplifier	02.03.2024	
			6.2 DC load line and DC equivalent circuit		6.2	6.2 DC load line and DC equivalent circuit	04.03.2024	
			6.3 AC load line and AC equivalent circuit		6.3	6.3 AC load line and AC equivalent circuit	06.03.2024	
			6.4 Calculation of gain		6.4	6.4 Calculation of gain	07.03.2024	
			6.5 Phase reversal		6.5	6.5 Phase reversal	11.03.2024	
			6.6 H-parameters of transistors		6.6	6.6 H-parameters of transistors	12.03.2024	
			6.7 Simplified H-parameters of transistors		6.7	6.7 Simplified H-parameters of transistors	13.02.2024	
			6.8 Generalised approximate model		6.8	6.8 Generalised approximate model	14.03.2024	
			6.9 Analysis of CB, CE, CC amplifier using generalised approximate model		6.9	6.9 Analysis of CB, CE, CC amplifier using generalised approximate model		
			6.10 Multi stage transistor amplifier		6.10	6.10 Multi stage transistor amplifier		
			6.10.1 R.C. coupled amplifier		6.10.1	6.10.1 R.C. coupled amplifier		
			6.10.2 Transformer coupled amplifier		6.10.2	6.10.2 Transformer coupled amplifier		
			6.11 Feed back in amplifier		6.11	6.11 Feed back in amplifier		
			6.11.1 General theory of feed back		6.11.1	6.11.1 General theory of feedback		
			6.11.2 Negative feedback circuit		6.11.2	6.11.2 Negative feedback circuit		
			6.11.3 Advantage of negative feedback		6.11.3	6.11.3 Advantage of negative feedback	15.03.2024	
			6.12 Power amplifier and its classification		6.12	6.12 Power amplifier and its classification	16.03.2024	
			6.12.1 Difference between voltage amplifier and power amplifier		6.12.1	6.12.1 Difference between voltage amplifier and power amplifier	18.02.2024	
			6.12.2 Transformer coupled		6.12.2	6.12.2 Transformer coupled class A power amplifier	19.03.2024	
			6.12.2 Transformer coupled		6.12.3	6.12.3 Class A push – pull amplifier		
					6.12.4			

			class A power amplifier 6.12.3 Class A push – pull amplifier 6.12.4 Class B push – pull amplifier 6.13 Oscillators 6.13.1 Types of oscillators 6.13.2 Essentials of transistor oscillator 6.13.3 Principle of operation of tuned collector, Hartley, colpitt, phase shift, weinbridge oscillator (no mathematical derivations)		6.13 6.13.1 6.13.2 6.13.3	6.12.4 Class B push – pull amplifier 6.13 Oscillators 6.13.1 Types of oscillators 6.13.2 Essentials of transistor oscillator 6.13.3 Principle of operation of tuned collector, Hartley, colpitt, phase shift, weinbridge oscillator (no mathematical derivations)	20.03.2024	
7	FIELD EFFECT TRANSISTOR	06	7.1 Classification of FET 7.2 Advantages of FET over BJT 7.3 Principle of operation of BJT 7.4 FET parameters (no mathematical derivation) 7.4.1 DC drain resistance 7.4.2 AC drain resistance 7.4.3 Trans-conductance 7.5 Biasing of FET	21.03.2024 TO 30.03.2024	7.1 7.2 7.3 7.4 7.4.1 7.4.2 7.4.3 7.5	7.1 Classification of FET 7.2 Advantages of FET over BJT 7.3 Principle of operation of BJT 7.4 FET parameters (no mathematical derivation) 7.4.1 DC drain resistance 7.4.2 AC drain resistance 7.4.3 Trans-conductance 7.5 Biasing of FET	21.03.2024 22.03.2024 23.03.2024 27.03.2024 28.03.2024 30.03.2024	

8	OPERATIONAL AMPLIFIERS	09	8.1 General circuit simple of OP-AMP and IC – CA – 741 OP AMP 8.2 Operational amplifier stages 8.3 Equivalent circuit of operational amplifier 8.4 Open loop OP-AMP configuration 8.5 OPAMP with fed back 8.6 Inverting OP-AMP 8.7 Non inverting OP-AMP 8.8 Voltage follower & buffer 8.9 Differential amplifier 8.9.1 Adder or summing amplifier 8.9.2 Sub tractor 8.9.3 Integrator 8.9.4 Differentiator 8.9.5 Comparator	02.04.2024 TO 19.04.2024	8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8 8.9 8.9.1 8.9.2 8.9.3 8.9.4 8.9.5	8.1 General circuit simple of OP-AMP and IC – CA – 741 OP AMP 8.2 Operational amplifier stages 8.3 Equivalent circuit of operational amplifier 8.4 Open loop OP-AMP configuration 8.5 OPAMP with fed back 8.6 Inverting OP-AMP 8.7 Non inverting OP-AMP 8.8 Voltage follower & buffer 8.9 Differential amplifier 8.9.1 Adder or summing amplifier 8.9.2 Sub tractor 8.9.3 Integrator 8.9.4 Differentiator 8.9.5 Comparator	02.04.2024 03.04.2024 04.04.2024 05.04.2024 06.04.2024 08.04.2024 09.04.2024 10.04.2024 12.04.2024 13.04.2024 15.04.2024 16.04.2024 18.04.2024 19.04.2024	
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