GOVT. POLYTECHNIC NAYAGARH LESSON PLAN

ACADEMIC YEAR-2022-23

Discipline : ELECTRICAL ENGG.	Semester: 6th Sem	Name of the Teaching Faculty : Jadunath Murmu(Sr. Lect, in ETC)
Subject : A.E.C&OPMP	No. of Days / per week class allotted : 04	Semester From date : 14.02.2023 To Date : 23.05.2023
Week	**Class Day**	**Topics**
3rd week of feb.	1st	Introduction
	2nd	1 . 1 P-N Junction Diode 1 . 2 Working of Diode
	3rd	1 . 3 V-I characteristic of PN junction Diode.
4th week of feb.	1st	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
	2nd	1 . 7 P-N Diode clipping Circuit.
	3rd	1 . 8 P-N Diode clamping Circuit
	4th	REVISION
5th week of feb. & 1st week March	1st	2 . 1 Thermistors, Sensors & barretters
	2nd	2 . 2 Zener Diode
	3rd	2 . 3 Tunnel Diode
	4th	2 . 4 PIN Diode
2nd MARCH	1st	3.1 Classification of rectifiers
	2nd	3.2 Analysis of half wave, calculate: 3.2.1 DC output current and voltage, 3.2.2 RMS output current and voltage,
3rd MARCH	1st	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
	2nd	full wave centre tapped 3.2.1 DC output current and voltage 3.2.2 RMS output current and voltage
	3rd	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
	4th	Analysis Bridge rectifiers 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
	1st	3.3 Filters: 3.3.1 Shunt capacitor filter 3.3.2 Choke input filter 3.3.3 π filte

4th March	2nd	TRANSISTORS: 4.1 Principle of Bipolar junction transistor
	3rd	4.2 Different modes of operation of transistor 4.3 Current components in a transistor
	4th	4.4 Transistor as an amplifier
5th March	1st	4.5 Transistor circuit configuration & its characteristics 4.5.1 CB Configuratio
	2nd	.5.2 CE Configuration
	3rd	4.5.3 CC Configuration
	4th	REVISION
1st April	1st	5.1 Transistor biasing
	2nd	5.2 Stabilization 5.3 Stability factor
	3rd	5.4 Different method of Transistors Biasing
	4th	5.4.1 Base resistor method
2nd April	1st	5.4.2 Collector to base bias
	2nd	5.4.3 Self bias or voltage divider method
	3rd	REVISION
3rd April	1st	6.1 Practical circuit of transistor amplifier
	2nd	6.2 DC load line and DC equivalent circuit, 6.3 AC load line and AC equivalent circuit
	3rd	6.4 Calculation of gain 6.5 Phase reversal
	4th	6.6 H-parameters of transistors 6.7 Simplified H-parameters of transistors
4th April	1st	6.8 Generalised approximate model 6.9 Analysis of CB, CE, CC amplifier using generalised approximate model 6.10 Multi stage transistor amplifier
	2nd	6.10.1 R.C. coupled amplifier 6.10.2 Transformer coupled amplifier
	3rd	.11 Feed back in amplifier 6.11.1 General theory of feed back 6.11.2 Negative feedback circuit 6.11.3 Advantage of negative feed back
	4th	6.12 Power amplifier and its classification 6.12.1 Difference between voltage amplifier and power amplifier
1st May	1st	**6.13 Oscillators** **6.13.1 Types of oscillators** **6.13.2 Essentials of transistor oscillator**
	2nd	6.13.3 Principle of operation of tuned collector
	3rd	Hartley, colpitt,
	4th	phase shift, wein bridge oscillator (no mathematical derivations)
2nd May	1st	7.1 Classification of FET 7.2 Advantages of FET over BJT 7.3 Principle of operation of BJT
	2nd	7.4 FET parameters (no mathematical derivation) 7.4.1 DC drain resistance
	3rd	7.4.2 AC drain resistance 7.4.3 Trans-conductance

	4th	7.5 Biasing of FET
3rd May	1st	8.1 General circuit simple of OP-AMP and IC – CA – 741 OP AMP
	1st	8.2 Operational amplifier stages 8.3 Equivalent circuit of operational amplifier
	2nd	8.4 Open loop OP-AMP configuration 8.5 OPAMP with fed back
	3rd	8.6 Inverting OP-AMP
4th May	1st	8.7 Non inverting OP-AMP 8.8 Voltage follower & buffer
	2nd	8.9 Differential amplifier 8.9.1 Adder or summing amplifier 8.9.2 Sub tractor
	3rd	8.9.3 Integrator 8.9.4 Differentiator 8.9.5 Comparator
	4th	REVISION

Signature of Sr.Lect./Lect.

Signature of HOD
Electrical Dept.