

# GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN

## ACADEMIC YEAR-2022-23

Discipline : ELECTRICAL ENGG.		Semester: 4th Sem		Name of the Teaching Faculty : Leena Marndi(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	
MONTH	Week	Class Day	Unit	Topics	
FEBRUARY	3rd	1st		1 . 1 P-N Junction Diode 1 . 2 Working of Diode	
		2nd		1 . 3 V-I characteristic of PN junction Diode.	
		3rd		1 . 4 DC load line 1 . 5 Important terms such as Ideal Diode, Knee voltage	
	4th	1st		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	1st		2 . 1 Thermistors, Sensors & barretters	
		2nd		2 . 2 Zener Diode	
MARCH	1st	3rd		2 . 3 Tunnel Diode 2 . 4 PIN Diode	
		4th		class Test1	
	2nd	1st		3.1 Classification of rectifiers	
		2nd		3.2 Analysis of half wave, full wave centre tapped calculate: 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	
	3rd	1st		3.2.1 DC output current and voltage 3.2.2 RMS output current and voltage	
		2nd		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	
		3rd		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	

		4th		3.3 Filters: 3.3.1 Shunt capacitor filter 3.3.2 Choke input filter 3.3.3 $\pi$ filter
	4th	1st		TRANSISTORS: 4.1 Principle of Bipolar junction transistor
		2nd		4.2 Different modes of operation of transistor 4.3 Current components in a transistor
		3rd		4.4 Transistor as an amplifier
		4th		4.5 Transistor circuit configuration & its characteristics 4.5.1 CB Configuratio
	5th	1st		4.5.2 CE Configuration
		2nd		4.5.3 CC Configuration
APRIL	2nd	1st		Class Test-2
		2nd		5.1 Transistor biasing 5.2 Stabilization 5.3 Stability factor
		3rd		5.4 Different method of Transistors Biasing
	3rd	1st		5.4.1 Base resistor method, 5.4.2 Collector to base bias
		2nd		5.4.3 Self bias or voltage divider method
		3rd		REVISION
		4th		6.1 Practical circuit of transistor amplifier
	4th	1st		6.2 DC load line and DC equivalent circuit, 6.3 AC load line and AC equivalent circuit
		2nd		6.4 Calculation of gain 6.5 Phase reversal
		3rd		6.6 H-parameters of transistors 6.7 Simplified H-parameters of transistors
		4th		6.8 Generalised approximate model 6.9 Analysis of CB, CE, CC amplifier using generalised approximate model 6.10 Multi stage transistor amplifier
	5th	1st		6.10.1 R.C. coupled amplifier 6.10.2 Transformer coupled amplifier
		2nd		6.11 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
		3rd		6.12 Power amplifier and its classification 6.12.1 Difference between voltage amplifier and power amplifier
		4th		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)

MAY	1st	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
	2nd	1st		8.1 General circuit simple of OP-AMP and IC – CA – 741 OP AMP
		2nd		8.2 Operational amplifier stages 8.3 Equivalent circuit of operational amplifier
		3rd		8.4 Open loop OP-AMP configuration 8.5 OPAMP with fed back
		4th		8.6 Inverting OP-AMP
	3rd	1st		Class Test-3
		2nd		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
		3rd		8.9.3 Integrator 8.9.4 Differentiator 8.9.5 Comparator
		4th		REVISION
	4th	1st		REVISION