

Discipline: Electrical & ETC Engg.	Semester: 5th	Name of the Teaching Faculty : PRADYUMNA KUMAR SAHOO
Subject: Power Electronics &PLC	No. Of Days/per week Class Allotted : 4P/W	Semester From Date: To Date: No. of Weeks: 15
Week	Class Day	THEORY
1 ST	1 ST	➤ Construction of SCR, Operation of SCR.
	2 ND	➤ Describe about Diode and How SCR will be formed VI characteristics of SCR.
	3 RD	➤ Two transistor analysis of SCR.
	4 TH	➤ Different turn of method of SCR.
2 ND	1 ST	➤ Turn on method of SCR.
	2 ND	➤ Gate characteristics of SCR.
	3 RD	➤ Gate characteristics of SCR.
	4 TH	➤ Turn of Method of SCR.
3 RD	1 ST	➤ Turn off method of SCR
	2 ND	➤ What is commutation?
	3 RD	➤ What is line commutation & Forced communication? Explanation of line commutation.
	4 TH	➤ Explanation of Forced commutation.
4 TH	1 ST	➤ Voltage & Current rating of SCR. Protection of SCR.
	2 ND	➤ Protection of SCR over voltage protection.
	3 RD	➤ Over current protection of SCR.
	4 TH	➤ Over current protection of SCR.
5 TH	1 ST	➤ Firing circuit of SCR. R-firing circuit
	2 ND	➤ R-C Firing Circuit
	3 RD	➤ UJT Firing Circuit
	4 TH	➤ What is snubber ckt A& Design snubber ckt.
6 TH	1 ST	➤ What is Rectifier operation of the rectifier ckt? What are the difference between Diode connected rectifier ckt & SCR connected rectifier CKT.

	2 ND	➤ What is phase angle & extinction angle? What is single quadrant & double quadrant semi convert.
	3 RD	➤ Working single phase fully condoled converter with resistive load.
	4 TH	➤ Working of three phase halfwave.
7 TH	1 ST	➤ Working of three phase fully wave. Controlled converter with resistive load.
	2 ND	➤ Work of single phase A.C Regulator.
	3 RD	➤ What is chapper, Working principle of chapper., What is step up & step down.
	4 TH	➤ Step-up chapper
8 TH	1 ST	➤ Step-down chapper
	2 ND	➤ Control modes chapper
	3 RD	➤ Operation of chapper in all four quadrats
	4 TH	➤ Operation of chapper in all four quadrats
9 TH	1 ST	➤ Classify inverters
	2 ND	➤ Explain the series inverter
	3 RD	➤ Explain the parallal inverter
	4 TH	➤ Explain the working of single – phase bridge inverter
10 TH	1 ST	➤ What is cycloconverter?
	2 ND	➤ Working of step up & step down cycloconverter.
	3 RD	➤ Step-down cycloconvertor
	4 TH	➤ Application of cycloconverter
11 TH	1 ST	➤ Application of power electronics ckt.
	2 ND	➤ List the factor affecting the speed of D.C Motor
	3 RD	➤ Speed control for D.C shunt motor using converter
	4 TH	➤ Speed control for D.C shunt motor using chapper.
12 TH	1 ST	➤ List the factors affecting the speed of the A.C motor
	2 ND	➤ Working of the UPS with block diagram
	3 RD	➤ Battery charger circuit using SCR with the help diagram

	4 TH	➤ Basic swithed mode power supply.
13 TH	1 ST	➤ Introduction of PLC
	2 ND	➤ Different parts of PLC by drawing the block diagram parpose ofeach part of PLC.
	3 RD	➤ Application of PLC.
	4 TH	➤ Ladder Diagram.
14 TH	1 ST	➤ Description of controls and coils the following states.
	2 ND	➤ Normally open, Normally close, Latching O/P, Branching
	3 RD	➤ Ladder diagram and Gate or Gate & Not Gate
	4 TH	➤ Ladder diagram for combination CKT using Nand, Non OR and Gate, Counters CTU, UTD.
15 TH	1 ST	➤ Ladder diagram using timers & conantens
	2 ND	➤ Ladder Diagram for following DOL Starter
	3 RD	<ul style="list-style-type: none"> • Stair Case Lighting • Traffic Lighting
	4 TH	➤ Temperature Controlled. Basics DSA & Scada System