Pr.2 POWER ELECTRONICS & PLC LAB

Name of the Course: Diploma in Electrical Engineering			
Name of the Faculty: S.Bichiballi		**W.E.F.:**01.08.2023	
Course code:	Pr.2	Course code:	5th
Total Period:	45	Total Period:	3 hrs
Lab. periods:	3 P / week	Lab. periods:	25
Maximum marks:	75	Maximum marks:	50

VISION:

To create competent & industry ready Electrical Diploma Engineers with professional and social values to meet future challenges.

MISSION:

- To prepare diploma holders through "qualitative competency based education system" to compete with national requirement along with core values.
- To produce dynamic Electrical Engineers to serve the society and industry.
- To develop leadership qualities, communication skills, critical thinking and attitude for lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1	Apply technical knowledge and skills learned in the field of Electrical Engineering to excel in Professional and/or higher education.
PEO2	To provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3	To engage in lifelong learning, career enhancement to adopt emerging technologies

COURSE OUTCOMES:

CO1	Analyze characteristics of power electronic devices.
CO2	Design basic power electronic circuits.
CO3	Explore usage of power converters in commercial and industrial applications.
CO4	Demonstrate programmable logic controller and execute basic ladder diagrams.

GOVERNMENT POLYTECHNIC KORAPUT
DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Week	Day	Experiment
1st	1st	Study of switching characteristics of a power transistor.
	2nd	
	3rd	
2nd	1st	Study of V-I characteristics of SCR.
	2nd	
	3rd	
3rd	1st	Study of V-I characteristics of TRIAC.
	2nd	
	3rd	
4th	1st	Study of V-I characteristics of DIAC.
	2nd	
	3rd	
5th	1st	Study of drive circuit for SCR & TRIAC using DIAC.
	2nd	
	3rd	
6th	1st	Study of drive circuit for SCR & TRIAC using UJT.
	2nd	
	3rd	
7th	1st	To study phase controlled bridge rectifier using resistive load.
	2nd	
	3rd	
8th	1st	To study series Inverter.
	2nd	
	3rd	
9th	1st	Study of voltage source Inverter.
	2nd	
	3rd	
10th	1st	To perform the speed control of DC motor using Chopper.
	2nd	
	3rd	
11th	1st	To study single-phase Cyclo-converter
	2nd	
	3rd	
12th	1st	Introduction/Familiarization PLC Trainer & its Installation with PC I. Learn the basics and hardware components of PLC II. Understand configuration of PLC system III. Study various building blocks of PLC IV. Determine the No. of digital I/O & Analog I/O
	2nd	
	3rd	
13th	1st	Execute the different Ladder Diagrams I. Demonstrate PLC and Ladder diagram-Preparation downloading and running II. Execute Ladder diagrams for different Logical Gates III. Execute Ladder diagrams using timers & counters
	2nd	
	3rd	

14th	1st 2nd 3rd	Execute the Ladder Diagrams with model applications I. DOL starter II. Star- Delta starter
15th	1st 2nd 3rd	Execute Ladder diagrams with model applications I. Stair case lighting II. Traffic light controller

01/08/23.

Signature of faculty concerned

H.O.D. Electrical