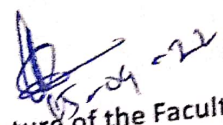
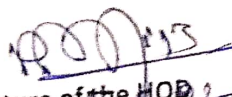


DISCIPLINE ELECTRICAL	SEMESTER 5TH	NAME OF THE TEACHING FACULTY Niranjan Nayak (Lect. in I & C)
SUBJECT POWER ELECTRONICS AND PLC	NO. OF DAYS/WEEK CLASS ALLOTTED - 60	SEMESTER FROM DATE 15.09.2022 to 22.12.2022 No. of week excluding holiday - 15
WEEK	CLASS DAY	THEORY TOPICS
1	16-09-2022	UNDERSTAND THE CONSTRUCTION AND WORKING OF POWER ELECTRONIC DEVICES - Construction, Operation, V-I characteristics & application of power diode.
2	17-09-2022	V-I characteristics & application of SCR, DIAC
3	20-09-2022	V-I characteristics & application of Power MOSFET, TRIAC
4	21-09-2022	V-I characteristics & application of Power GTO & IGBT
5	23-09-2022	Two transistor analogy of SCR. Gate characteristics of SCR.
6	24-09-2022	Switching characteristic of SCR during turn on and turn off. Turn on methods of SCR.
7	27-09-2022	Turn off methods of SCR (Line commutation and Forced commutation) Load Commutation and Resonant pulse commutation
8	28-09-2022	Voltage and Current ratings of SCR
9	30-09-2022	Protection of SCR of Over voltage protection ,Over current protection and Gate protection
10	01-10-2022	Firing Circuits General layout diagram of firing circuit
11	11-10-2022	R firing circuits
12	12-10-2022	R-C firing circuit
13	14-10-2022	UJT pulse trigger circuit
14	15-10-2022	Synchronous triggering (Ramp Triggering)
15	18-10-2022	Design of Snubber Circuits.
16	19-10-2022	Revision of protection and firing circuits of SCR
17	21-10-2022	Controlled rectifiers Techniques(Phase Angle, Extinction Angle control), Single quadrant semi converter, two quadrant full converter and dual Converter
18	22-10-2022	Working of single-phase half wave controlled converter with Resistive and R-L loads.
19	25-10-2022	Understand need of freewheeling diode.
20	26-10-2022	Working of single phase fully controlled converter with resistive and R- L loads.
21	28-10-2022	Working of three-phase half wave controlled converter with Resistive load.
22	29-10-2022	Working of three phase fully controlled converter with resistive load.
23	01-11-2022	Working of single phase AC regulator.
24	02-11-2022	Working principle of step up & step down chopper
25	04-11-2022	Control modes of chopper
26	05-11-2022	Operation of chopper in all four quadrants
27	07-11-2022	Revision of chopper circuits
28	09-11-2022	Classify inverters.
29	11-11-2022	Explain the working of series inverter.
30	12-11-2022	Explain the working of parallel inverter.
31	15-11-2022	Explain the working of single-phase bridge inverter.
32	16-11-2022	Explain the basic principle of Cyclo-converter.

33	18-11-2022	Explain the working of single-phase step up & step down Cyclo-converter.
34	19-11-2022	Applications of Cyclo-converter.
35	22-11-2022	Revision of inverter circuits
36	23-11-2022	List applications of power electronic circuits.
37	25-11-2022	List the factors affecting the speed of DC Motors.
38	26-11-2022	Speed control for DC Shunt motor using converter.
39	29-11-2022	Speed control for DC Shunt motor using chopper.
40	30-11-2022	List the factors affecting speed of the AC Motors.
41	02-12-2022	Speed control of Induction Motor by using AC voltage regulator.
42	03-12-2022	Speed control of induction motor by using converters and inverters (V/F control).
43	05-12-2022	Working of UPS with block diagram.
44	06-12-2022	Battery charger circuit using SCR with the help of a diagram.
45	07-12-2022	Basic Switched mode power supply (SMPS) - explain its working & applications.
46	08-12-2022	Revision of SMPS and battery charger circuits
47	09-12-2022	Introduction of Programmable Logic Controller(PLC) Advantages of PLC
48	10-12-2022	Different parts of PLC by drawing the Block diagram and purpose of each part of PLC. Applications of PLC
49	12-12-2022	Ladder diagram Description of contacts and coils in the following states i) Normally open ii) Normally closed iii) Energized output iv) latched Output v) branching
50	13-12-2022	Ladder diagrams for i) AND gate ii) OR gate and iii) NOT gate
51	14-12-2022 (9:00AM-9:50AM)	Ladder diagrams for combination circuits using NAND, NOR, AND, OR and NOT
52	14-12-2022	Timers-i) T ON ii) T OFF and iii) Retentive timer.
53	15-12-2022	Counters-CTU, CTD
54	16-12-2022	Ladder diagrams using Timers and counters
55	17-12-2022 9:00AM-9:50AM)	PLC Instruction set
56	17-12-2022	Ladder diagrams for following (i) DOL starter and STAR-DELTA starter (ii) Stair case lighting (iii) Traffic light Control (iv) Temperature Controller
57	19-12-2022	Special control systems- Basics DCS & SCADA systems
58	20-12-2022	Computer Control-Data Acquisition, Direct Digital Control System (Basics only).
59	21-12-2022	Revision of ladder diagram and different problems of Plc
60	22-12-2022	Previous year questions and answers discussion


Signature of the Faculty


Signature of the HOD