Power Electronics Laboratory

Sl. No.	Title of the Experiments
01	Study of the characteristics of an SCR.
02	Study of the characteristics of a Triac.
03	Study of different triggering circuits of an SCR.
04	Study of firing circuits suitable for triggering SCR in a single phase full controlled bridge.
05	Study of the operation of a single phase full controlled bridge converter with R and R-L load.
06	Study of performance of single-phase half controlled symmetrical and asymmetrical bridge converters.
07	Study of performance of step-down chopper with R and R-L load.
08	Study of performance of single-phase controlled converter with and without source inductance (simulation).
09	Study of performance of step-up and step-down chopper with MOSFET, IGBT and GTO as switch (simulation).
10	Study of performance of single-phase half controlled symmetrical and asymmetrical bridge converter (simulation).
11	Study of performance of three phase-controlled converter with R & R-L load (simulation).
12	Study of performance of PWM bridge inverter using MOSFET as switch with R and R-L load.
13	Study of Zero Voltage Switching Resonant converter and Zero Current Switching Resonant Converter and to plot its output waveforms.
14	Study the speed control of universal motor to plot speed vs α.

Microprocessor and Microcontroller Laboratory

Sl. No.	Title of the Experiments
01	Programs for 16-bit arithmetic operations for 8086 (using various addressing modes)
02	Program for sorting an array for 8086
03	Program for searching for a number or character in a string for 8086
04	Program for String manipulations for 8086
05	Program for digital clock design using 8086.
06	Interfacing ADC and DAC to 8086.
07	Parallel communication between two microprocessors using 8255.
08	Serial communication between two microprocessor kits using 8251.
09	Interfacing to 8086 and programming to control stepper motor.
10	Programming using arithmetic, logical and bit manipulation instructions of 8051
11	Program and verify Timer/Counter in 8051.
12	Program and verify interrupt handling in 8051.
13	UART operation in 8051.
14	Interfacing LCD to 8051.
15	Interfacing matrix or keyboard to 8051.
16	Data transfer from peripheral to memory through DMA controller 8237/8257
17	Programs for different arithmetic and logical operation using 8085.

Electrical and Electronics Design Laboratory

Sl. No.	Design Problems

01	Designing a heating element with specified wattage, voltage and ambient temperature.
02	Designing an air core grounding reactor with specified operating voltage, nominal current and fault current
03	Designing the power distribution system for a small township
04	Designing a double circuit transmission line for a given voltage level and power (MVA) transfer.
05	Wiring and installation design of a multistoried residential building (G+4, not less than 16 dwelling flats with a lift and common pump)
06	Designing an ONAN distribution transformer.
07	Designing a three-phase squirrel cage induction motor.
08	Designing a three-phase wound rotor induction motor.
09	Designing a split phase squirrel cage induction motor for a ceiling fan or a domestic pump.
10	Designing a permanent magnet fractional hp servo motor.
11	Design the control circuit of a Lift mechanism
12	Design a controller for speed control of DC machine.
13	Design a controller for speed control of AC machine.
14	Electronic system design employing electronic hardware (Analog, Digital, Mixed signal), microcontrollers, CPLDs, and FPGAs, PCB design and layout leading to implementation of an application.
15	Design of Power Electronic based systems.

Electric Drives Laboratory	
Sl. No.	**Title of the Experiments**
01	PWM Inverter fed 3 phase Induction Motor control using MATLAB (Simulation).
02	VSI fed Induction Motor Drive analysis using MATLAB Software (Simulation).

03	Study of V/f control operation of 3 phase induction motor drive.
04	Study of permanent magnet synchronous motor drive fed by PWM Inverter using Software (Simulation).
05	A. Regenerative braking operation for DC Motor - Study using MATLAB (Simulation). B. Dynamic braking operation for DC Motor - Study using MATLAB (Simulation).
06	A. Regenerative braking operation for three phase Induction Motor - Study using MATLAB (Simulation). B. Dynamic braking operation for three phase Induction Motor - Study using MATLAB (Simulation).
07	A. Introduction to PLC Trainer Kit. B. Speed Control of DC Separately Excited Motor using PLC Trainer Kit.
08	Study of thyristor-controlled DC Drive.
09	Study of chopper-controlled DC Drive.
10	Study of speed control of single-phase motor using TRIAC.