

BASIC ELECTRONICS LABORATORY

LIST OF EXPERIMENTS

S.No.	Name of the Experiment
1.	Semiconductor Diode Characteristics
2.	Half Wave and Full Wave Rectifier with and without Filters
3.	Zener Diode Characteristics
4.	Transistor Characteristics in CB Configuration
5.	Transistor Characteristics in CE Configuration
6.	Frequency Response of RC Coupled Amplifier
7.	RC Phase Shift Oscillator
8.	Op-Amp Adder and Subtractor
9.	Op-Amp Integrator and Differentiator
10.	Op-Amp Square Wave Generator

ELECTRONIC DEVICES & CIRCUITS LABORATORY

LIST OF EXPERIMENTS

S. No.	Name of the Experiment
1.	Semiconductor Diode Characteristics
2.	Zener Diode as a Voltage Regulator
3.	Full Wave Rectifier with and without Filters
4.	Transistor Characteristics in CB Configuration
5.	Measurement of h-Parameters in CE Configuration
6.	Design of Voltage Shunt feedback Amplifier
7.	Frequency response of RC Coupled Amplifier
8.	Design of FET Amplifier
9.	Design of Emitter Follower
10.	RC Phase Shift Oscillator

LINEAR INTEGRATED CIRCUITS LABORATORY

LIST OF EXPERIMENTS

S. No.	Name of the Experiment
1	Measurement of OP-AMP Parameters
2	Measurement of OP-AMP Open loop gain
3	OP-AMP Differentiator
4	OP-AMP Integrator
5	Precision Full Wave Rectifier
6	OP-AMP Sine Wave Generator (Wien's Bridge Oscillator)
7	Second Order Active Low-pass Filter
8	555 Timer as Astable Multivibrator
9	555 Timer as Monostable Multivibrator
10	Voltage Regulator (IC 723)

DIGITAL ELECTRONICS LABORATORY

LIST OF EXPERIMENTS

- I. Realization and Truth Table Verification of
 - 1 Logic gates using NAND / NOR Gates
 2. Half and Full Adder using NAND Gates
 3. Half and Full Subtractor using NAND Gates
 4. Boolean functions using MUX IC's
- II. Design and Verification of Function Table of
 5. BCD Adder using 4 bit Full Adder
 6. 4:1 MUX using Logic Gates
 7. BCD to Decimal Decoder
 8. BCD to Seven Segment Decoder
- III. Design and Verification of Truth Table of
 9. JK, T and D Flip-Flops
 10. Mod-N Ripple Counter
 11. Mod-N Synchronous Counter
 12. Decade Counter (IC 7490)
 13. 4-bit Ring and Johnson Counters using IC 7474.
 14. 4-bit Shift Register using IC 7474.

MICROPROCESSORS & MICROCONTROLLERS LABORATORY

LIST OF EXPERIMENTS

LIST OF PROGRAMS (8086MP) / (8051MC)

- I) ADDITION
 - 1. First 'N' natural numbers
 - 2. Squares of first N-natural numbers
 - 3. Array of Byte / Word data
 - 4. Multibyte precision data
- II) MULTIPLICATION / DIVISION
 - 1. Unsigned / Signed of 8/16 bit data
 - 2. Factorial of given number
 - 3. Average of array of Byte / Word data
- III) SORTING
 - 1. Largest / Smallest of given data
 - 2. Ascending / Descending order
 - 3. Reverse order
- IV) CODE CONVERSIONS
 - 1. BCD to Binary (HEX) and Binary to BCD
 - 2. Binary (HEX) to ASCII and ASCII to Binary
- V) STRING MANIPULATIONS
 - 1. Move a String from one segment to another
 - 2. String Comparison
 - 3. Palindrome Checking
- VI) INTERFACING WITH
 - 1. DAC MODULE
 - a) Square Wave Generation
 - b) Saw tooth Wave Generation
 - c) Triangular Wave Generation
 - 2. ADC MODULE
 - 3. STEPPER MOTOR MODULE
 - 4. TRAFFIC LIGHT CONTROLLER MODULE

COMPUTER AIDED DIGITAL DESIGN LABORATORY

LIST OF EXPERIMENTS

VHDL Simulation of

- I) Combinational Circuits
 - 1. Half / Full Adder
 - 2. Half / Full Subtractor
 - 3. n-bit Full Adder
 - 4. Code Converters
 - 5. Multiplexer / DeMultiplexer
 - 6. Encoder / Decoder
- II) Sequential Circuits
 - 1. Flip Flops (SR, JK, D, T)
 - 2. Mod-N Ripple Counter
 - 3. Mod-N Synchronous Counter
 - 4. Shift Registers
- III) Arithmetic Logic Unit (ALU)
- IV) Memories

DIGITAL SIGNAL PROCESSING LABORATORY

LIST OF EXPERIMENTS

MATLAB Programming

1. To generate and plot discrete time signals
2. To filter a noisy signal using a 3-Sample Moving Averager
3. To plot Frequency Response of the LTI Systems
4. To determine the linear convolution of two sequences and plot the result
5. To determine the linear convolution of two sequences via DFT approach and plot the result
6. To prove the Circular Convolution property of DFT
7. To calculate 8, 128 and 256-point DFT for a given signal and plot its magnitude and phase spectrum
8. To plot the magnitude responses of Rectangular, Triangular, Hannings, Hamming and Blackman windows
9. To design an FIR filter for Low pass, High pass and Band pass specifications
 - i. Plot the windowed impulse response
 - ii. Plot magnitude(dB) and phase responses
10. To design an IIR filter for Low pass, High pass and Band pass specifications and plot magnitude(dB) and phase responses

ELECTRICAL AND ELECTRONIC MEASUREMENTS LABORATORY

LIST OF EXPERIMENTS

S. No.	Name of the Experiment
1	Range extension of Ammeter
2	Conversion of Ammeter to Voltmeter
3	Calibration of Ohmmeter using Ammeter
4	Measurement of A.C. Voltage using PMMC Meter
5	Measurement of Resistance using Wheatstone Bridge Circuit
6	Measurement of Low Resistance using Kelvin's Double Bridge Circuit
7	Measurement of Inductance using Maxwell Bridge Circuit
8	Measurement of Capacitance using Schering Bridge Circuit
9	Measurement of Frequency using Lissajous Patterns
10	Measurement of Phase using Lissajous Pattern
11	Measurement of Voltage using D.C Crompton's Potentiometer

INSTRUMENT TRANSDUCERS LABORATORY

LIST OF EXPERIMENTS

S. No.	Name of the Experiment
1	Measurement of Strain using Strain Gauge Transducer
2	Measurement of force using Strain Gauge Force Transducer
3	Measurement of Torque using Strain Gauge Torque Transducer
4	Measurement of Displacement using Capacitive Transducer
5	Measurement of Displacement using LDR Demonstration Setup
6	Measurement of Load using Proving Ring type Load cell
7	Measurement of Displacement using LVDT
8	Measurement of Temperature using Thermocouple and Thermistor Sensors
9	Measurement of Temperature using RTD Sensor
10	Measurement of Temperature using Thermopile Setup

PROCESS INSTRUMENTATION LABORATORY

LIST OF EXPERIMENTS

S.No.	Name of the Experiment
1	Measurement of Pressure using Strain Gauge Pressure Transducer
2	Measurement of Pressure using Differential Bellows Demonstration Setup
3	Measurement of Temperature using Optical Radiation Pyrometer
4	Measurement of Acceleration using Accelerometer Demonstration Setup
5	Measurement of Sound Level using Sound Level Demonstration Setup
6	Study and Use of Instrumentation Amplifier
7	Measurement of Flow using Orifice meter, Venturi meter, Rotameter and Turbine Flow meter
8	Study the Characteristics of I-P Converter
9	Measurement of Level using Rheostatic Method
10	Measurement of Speed using Stroboscope Demonstration setup

PROCESS CONTROL LABORATORY

LIST OF EXPERIMENTS

S. No.	Name of the Experiment
1	To Study the various Control actions (ON-OFF, P, PI, PD & PID) for a Level Process Controller
2	To Study the various Control actions (ON-OFF, P, PI, PD& PID) for a Flow Process Controller
3	To Study the various Control actions (ON-OFF, P, PI, PD & PID) for a Pressure Process Controller
4	To Study the various Control actions (ON-OFF, P, PI, PD &PID) for a Temperature Process Controller
5	To Study the Characteristics of a Split Range Control action on the Level Process
6	To Study the Performance of a Cascade Controller
7	To study the Characteristics of different Control Valves (Equal Percentage, Linear, Quick Opening)
8	To Study the System Response of various Control actions (P, PI&PID) using Process Control Simulator
9	To Determine the Time constant of Interacting and Non-Interacting Systems
10	To Study the Real Time Applications using Programmable Logic Controller (PLC)