III Year II Semester	L	T	P	C
Code: 20EC6111	0	0	3	1.5

MICROPROCESSORS AND MICROCONTROLLERS LAB

Course Objectives:

1. Study the Architecture of 8086 microprocessor.
2. Learn the design aspects of I/O and Memory Interfacing circuits.
3. Study the Architecture of 8051 microcontroller.
4. Study the Architecture of ARM CORTEX M3 PROCESSOR

LIST OF EXPERIMENTS:

PART-A :(Minimum of 6 Experiments has to be performed)

8086 Assembly Language Programming using Assembler Directives

1. Addition of n-BCD numbers
2. Multiplication and Division operations
3. Multi byte addition/subtraction
4. Sum of squares/cubes of a given n-numbers
5. Factorial of given n-numbers
6. Sorting.
7. String operations
8. Stack operations
9. BCD to Seven segment display codes

PART- B: (Minimum of 3 Experiments has to be performed)

8086 Interfacing

1. Hardware/Software Interrupt Application
2. A/D Interface through Intel 8255
3. D/A Interface through Intel 8255
4. Keyboard and Display Interface through Intel 8279
5. Generation of waveforms using Intel 8253/8254

PART- C: (Minimum of 3 Experiments has to be performed)

8051 Assembly Language Programs

1. Finding number of 1's and number of 0's in a given 8-bit number
2. Addition of even numbers from a given array
3. Ascending/ Descending order
4. Average of n-numbers

PART-D: (Minimum of 2 Experiments has to be performed)

Conduct the following experiments using ARM CORTEX M3 PROCESSOR USING KEIL MDK ARM

1. Write an assembly program to multiply of 2 16-bit binary numbers.
2. Write an assembly program to find the sum of first 10 integer numbers.
3. Write a program to toggle LED every second using timer interrupt.

Equipment Required:

1. Regulated Power supplies
2. Analog/Digital Storage Oscilloscopes
3. 8086 Microprocessor kits
4. 8051 microcontroller kits
5. ADC module
6. DAC module
7. Stepper motor module
8. Keyboard module
9. LED,7-Segemt Units
10. Digital Multimeters
11. ROM/RAM Interface module
12. Bread Board etc

Course Outcomes:

A student who successfully fulfils this course requirement will be able to:

S. No	Course Outcome	BTL
1.	Design and implement programs on 8086 microprocessor	L3
2.	Design interfacing circuits with 8086	L3
3.	Design and implement 8051 microcontroller-based systems	L3
4.	Understand the concepts related to I/O and memory interfacing	L2
5.	Understand the concepts related to ARM CORTEX M3 PROCESSOR	L2

Correlation of COs with Pos & PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	2	-	-	-	2	-	-	-	3	-	-	-	2	2
CO 2	2	-	-	-	2	-	-	-	3	-	-	-	2	2
CO 3	2	2	-	-	2	-	-	-	3	-	-	-	2	2
CO 4	2	2	-	-	2	-	-	-	3	-	-	-	2	2
CO 5	2	2	-	-	2	-	-	-	3	-	-	-	2	2