Microprocessors and Microcontrollers

Module 1: Architecture of Microprocessors (6)

General definitions of mini computers, microprocessors, micro controllers and digital signal processors. Overview of 8085 microprocessor. Overview of 8086 microprocessor. Signals and pins of 8086 microprocessor

Module 2: Assembly language of 8086 (6)

Description of Instructions. Assembly directives. Assembly software programs with algorithms

Module 3: Interfacing with 8086 (8)

Interfacing with RAMs, ROMs along with the explanation of timing diagrams. Interfacing with peripheral ICs like 8255, 8254, 8279, 8259, 8259 etc. Interfacing with key boards, LEDs, LCDs, ADCs, and DACs etc.

Module 4: Coprocessor 8087 (4)

Architecture of 8087, interfacing with 8086. Data types, instructions and programming

Module 5: Architecture of Micro controllers (4)

Overview of the architecture of 8051 microcontroller. Overview of the architecture of 8096 16 bit microcontroller

Module 6: Assembly language of 8051 (4)

Description of Instructions. Assembly directives. Assembly software programs with algorithms

Module 7: Interfacing with 8051 (5)
Interfacing with keyboards, LEDs, 7 segment LEDs, LCDs, Interfacing with ADCs. Interfacing with DACs, etc.

Module 8: High end processors (2)

Introduction to 80386 and 80486

Lecture Plan:

Module	Learning Units	Hours	Total
1. Architecture of Microprocessors	1. General definitions of mini computers, microprocessors, micro controllers and digital signal processors	1	6
	2. Overview of 8085 microprocessor	1	
	3. Overview of 8086 microprocessor	2.5	
	4. Signals and pins of 8086 microprocessor	1.5	
2.Assembly language of 8086	5. Description of Instructions	2.5	6
	6. Assembly directives	0.5	
	7. Algorithms with assembly software programs	3	
3. Interfacing with 8086	8. Interfacing with RAMs, ROMs along with the explanation of timing diagrams	2	8
	9. Interfacing with peripheral ICs like 8255,8254, 8279, 8259, 8259, key boards, LEDs, LCDs, ADCs, DACs etc.	6	
4. Coprocessor 8087	10. Architecture of 8087, interfacing with 8086	2	4
	11. Data types, instructions and programming	2	
5. Architecture of Micro controllers	12. Overview of the architecture of 8051 microcontroller.	2	4
	13. Overview of the architecture of 8096 16 bit microcontroller	2	
6. Assembly language of 8051	14.Description of Instructions	2	5
	15.Assembly directives	1	
	16. Algorithms with assembly software programs	2	
7. Interfacing with 8051	17. Interfacing with keyboards, LEDs, 7 segment LEDs, LCDs, ADCs, DACs	4	4
8. High end processors	18. Introduction to 80386 and 80486	2	2