

AMEI-18 MICROCONTROLLER BASED SYSTEM DESIGN

UNIT-1 INTRODUCTION TO MICROPROCESSOR SYSTEMS:

- 1.1 Architecture and PIN diagram of 8085,
- 1.2 Timing Diagram, memory organization,
- 1.3 Addressing modes, Interrupts. Assembly Language Programming.

UNIT-2 8086 MICROPROCESSOR:

- 2.1 8086 Architecture, difference between 8085 and 8086 architecture,
- 2.2 Generation of physical address, PIN diagram of 8086,
- 2.3 Minimum Mode and Maximum mode, Bus cycle,
- 2.4 Memory Organization, Memory Interfacing, Addressing Modes,
- 2.5 Assembler Directives, Instruction set of 8086,
- 2.6 Assembly Language Programming, Hardware and Software Interrupts.

UNIT-3 INTERFACING OF 8086 WITH 8255, 8254/ 8253, 8251, 8259:

- 3.1 Introduction, Generation of I/O Ports,
- 3.2 Programmable Peripheral Interface (PPI)-Intel 8255,
- 3.3 Sample-and-Hold Circuit and Multiplexer, Keyboard and Display Interface,
- 3.4 Keyboard and Display Controller (8279),
- 3.5 Programmable Interval timers (Intel 8253/8254), USART (8251), PIC (8259), DAC, ADC, LCD, Stepper Motor.

UNIT-4 OVERVIEW OF MICROCONTROLLER 8051:

- 4.1 Introduction to 8051 Micro-controller,
- 4.2 Architecture, Memory organization,
- 4.3 Special function registers, Port Operation,
- 4.4 Memory Interfacing, I/O Interfacing,
- 4.5 Programming 8051 resources, interrupts,
- 4.6 Programmer's model of 8051,
- 4.7 Operand types, Operand addressing,
- 4.8 Data transfer instructions, Arithmetic instructions,
- 4.9 Logic instructions, Control transfer instructions,
- 4.10 Timer & Counter Programming,
- 4.11 Interrupt Programming.

References Books:

1. Muhammad Ali Mazidi, Janice Gillispie Mazidi, Rolin D. MCKinlay "The 8051 Microcontroller and Embedded Systems", 2nd Edition, Pearson Education 2008.
2. Kenneth J. Ayala, "The 8086 Microprocessor: Programming & Interfacing The PC", Delmar Publishers, 2007.