

MICROPROCESSORS, PRINCIPLES AND APPLICATIONS

UNIT – I

Evolution of Microprocessors – Intel 8085 architecture – Instruction set – Instruction and data formats – Addressing modes – Status flags – Intel 8085 instructions – Simple 8085 programs.

UNIT – II

Overview of microcomputer systems – 8086 architecture – CPU architecture – Internal operation – Machine language instructions – The 8088.

UNIT – III

Assembler Language Programming: Assembler Instruction format – Data transfer instructions – Branch instructions – Loop instructions – Flag manipulation instructions – Logical instructions – Shift and rotate instructions – String instruction – REP prefix.

UNIT – IV

I/O interfaces : Serial Communication interfaces – Asynchronous communication – Synchronous Communication – 8251 programmable communication interface – Parallel Communication – 8255 programmable Peripheral Interface – 8237 DMA controller.

UNIT – V

Microprocessor applications – Delay subroutines – Interfacing of 7 – Segment displays – Frequency measurement – Temperature measurement and control – Water level indicator – Microprocessor based traffic control.

Text Books:

1. Badri Ram – 4th revised and enlarged edition – Dhanpat Rai and Sons – “Fundamentals of microprocessors and Microcomputers” 1993 (For Units 1 & 5).
2. Microcomputer Systems: The 8086/8088 family – Architecture Programming and Design – Yu Cheng Liu and Glenn A.Gibson - Prentice Hall of India – 1991.

Unit – 2 : Chapter 1 – Sec.1.1.

Chapter 2 – Sec 2.1.,2.2.,2.3., & 2.5.

Unit – 3 : Chapter 3 – Sec 3.1., 3.2.,3.3.,3.4.,3.5,3.7.,3.8. & 3.9.

Chapter 5 – Sec 5.1. & 5.2.

Unit – 4 : Chapter 9 – Sec 9.1.1.,9.1.2.,9.1.4., 9.2.1. & 9.5.