

CORE COURSE X - MICROPROCESSOR AND ITS APPLICATIONS

UNIT 1:

Evaluation of Microprocessors – Single Chip Microcomputer Microprocessor Applications – Programming Digital Computers – Memory – Buses – Memory addressing capacity and CPU – Microcomputers – Processor Architecture – Intel 8085 – Instruction Cycle – Timing diagram.

UNIT 2:

Instruction set of Intel 8085 – Instruction and Data Formats – Addressing Modes – Status flags – Intel 8085 Instructions – Programming of Microprocessors – Assembly language – Assemblers – Stacks and Subroutines – MACRO – Microprogramming.

UNIT 3:

Assembly language Programming – Simple examples – Addition and Subtraction of Binary and Decimal Numbers – Complements – Shift – Masking – Finding the largest and smallest numbers in an Array – Arranging a series of numbers – Sum of a series of Numbers – Multiplication – Division – Multibyte Addition and Subtraction.

UNIT 4:

Peripheral Devices and Interfacing – Address Space Partitioning – Memory and I/O Interfacing – Data transfer schemes – Interrupts of Intel 8085 – Interfacing memory and I/O devices – I/O ports – Programmable peripheral Interface – Programmable Counter / Interval Timer – A/D Converter and D/A Converter.

UNIT 5:

Microprocessor Applications – Delay Subroutines – Interfacing of 7 Segment Displays – Frequency measurement – Temperature measurement and Control – Water Level Indicator – Microprocessor based Traffic Control.

TEXT BOOK:

Fundamentals of Microprocessors and Microcomputers – Badri Ram – Fourth Revised and Enlarged Edition – Dhanpat Rai and Sons – 1993.

REFERENCE BOOK:

Microprocessor Architecture, Programming and Applications with the 8085 / 8080A – Romesh S.Gaonkar – Wiley Eastern – 1990