**Subject Code : P8AP3**

## CORE COURSE – III MICROPROCESSORS AND APPLICATIONS

### Unit-I 8085 Microprocessor architecture

Architecture of 8085- Instruction classification- data transfer instructions- arithmetic instructions- logical instructions- branching instructions- machine and control operations- instruction format- addressing modes- stack and subroutines – simple programs- 8 bit addition, 16 bit addition, 8 bit subtraction-multiplication- division and smallest and biggest numbers in a given array

### Unit –II Interfacing memory and Peripherals

Interfacing memory and devices- I/O and Memory mapped I/O- Type of interfacing devices- Data transfer schemes- programmed and DMA data transfer schemes, Programmable Peripheral Interface (8255A)- 8253 Timer Interface- DMA controller- Programmable Interrupt controller (8259)- Programmable communication Interface (8251)

### Unit- III Applications of 8085 Microprocessor

Digital to Analog converter and waveform generator- Analog to digital converter- segment display- stepper motor interfacing- Temperature measurement and control- Water level indicator- Traffic light controller.

### Unit-IV 8086 Microprocessor

Pin description of 8086- minimum and maximum mode signals – internal Architecture – register organization- General purpose, index, pointer, segment regsisters and flags- Bus structure – Effective and Physical address and pipeline- addressing modes.

### Unit-V 8086 Instructions

8086-instruction set-instructions- data transfer - arithmetic, logical, branching and string manipulation instructions- Assembler and Assemble directives- Simple programs – addition, subtraction, multiplication and division- data transfer using string instructions.

### Books for Study


1. S.Gaonkar, Microprocessor architecture, Programming and applications with 8085, Penram International, Third Edition, New Delhi,1995. (Units – I, II, III).
2. Douglas V.Hall, Microprocessors Interfacing, Programming Hardwares- Tata McGraw Hill Publishing Pvt. Ltd., New Delhi, 2003 (Units - IV & V)


### Books for Reference


1. Lance A.Leventhal, Introduction to Microprocessors Software, Hardware Programming, Prentice Hall of India, New Delhi, 1995.
2. B.Ram, Advanced microprocessor and Interfacing, Tata McGraw Hill Publishing company Ltd., New Delhi, 2003.
3. B. Ram, Fundamentals of Microprocessors, Dhanpat Rai Sons, New Delhi, 2002 (Units-I, II & III)