Subject Code : SIF

Paper – VI – DIGITAL ELECTRONICS and MICROPROCESSORS:

Unit – I: Logic gates and IC Packages.

Basic concepts – Boolean algebra – DeMorgan's theorems – Boolean identities – and Logic gates, IC Packages – Universal building blocks simplifications of expression by K-Map - SOP and POS expressions.

Unit – II: Introduction to Microprocessor and its Architecture.

Block diagram of microcomputer – Microprocessor evolution – General architecture of microprocessor - architecture of 8085 - Status flags – Architecture of 8086 – Functional block diagram – RAM, ROM – EPROM – EEPROM and PLA.

Unit – III: Instruction Set.

Machine Language and assembly Language – Instruction format of 8085 - Addressing modes – Types of instructions – Instruction set for 8085 microprocessor.

Unit – IV: Assembly Language Programming and Simple Programs.

Flowcharting – Loops – Subroutines – Macros – Pseudo instructions – Assembler – Labels.

8 bit addition – 8 Bit subtraction – 16 bit addition – 16 bit subtraction – 8 bit multiplication and divisions – BCD addition – Finding the biggest and the smallest from the given data – Block data transfer.

Unit – V: Data Transfer Schemes and Interrupt.

Data transfer schemes – Programmed mode data transfer – Software and hardware interrupts – Interrupt driven data transfer – Direct memory access data transfer – Single interrupt level – Multiple interrupt levels – Interrupt handling methods.

Books for Study:

1. Microprocessor Architecture: Programming and Applications with 8085/8080 A – Goankar – Wiley Eastern.
2. Microprocessor Organization and Architecture – L.A. Leventhal, Prentice Hall India.
3. Microprocessor and Microcomputers – B. Ram, Dhanpat Rai & Sons – 4th edition.
4. Digital Computer Fundamentals – Thomas C. Bartee - McGraw Hill International Edition – 1995.