SECOND YEAR – SEMESTER – IV

PAPER IV: MICROPROCESSOR AND ITS APPLICATIONS

Credits: 4 Hours: 75

Objective: To learn the architecture of Microprocessor and programming in Assembly language.

UNIT – I

Introduction to Micro Computers, Microprocessors and Assembly Languages – Microprocessor architecture and its operations – 8085 MPU – 8085 Instruction set and classifications.

UNIT – II

Writing assembly levels programs – Programming techniques such as looping, counting and indexing- Addressing modes – Data transfer instructions – Arithmetic and logic operations – Debugging.

UNIT – III

Microprocessor timing – Timing and Control Unit – Timing of Intel 8085 – Opcode fetch cycle – Memory – I/O read and write cycles – stack – subroutine – Conditional call and return instructions.

UNIT – IV

BCD to Binary and Binary to BCD conversions – BCD to HEX and HEX to BCD conversions – ASCII to BCD and BCD to ASCII conversions – Binary to ASCII and ASCII to Binary conversions – Multi byte addition – Multi byte subtraction – BCD addition – BCD Subtraction – Multiplication and Division – Applications of Micro processor: Traffic signal controller.

UNIT – V

Interrupt – Implementation of interrupts – Multiple interrupt – 8085 – Trap – Problems on implementing 8085 interrupt – DMA – Memory interfaces – RAM and ROM – I/O interface – Direct I/O – Memory mapped I/O.

TEXT BOOK

1. R.S. Gaonkar, *Microprocessor Architecture Programming and Applications with 8085/8080A*. Wiley Eastern limited, 1990
2. A.Mathur, *Introduction to Microprocessor*. Third Edition, Tata McGraw-Hill Publishing Co.Ltd., 1993.
3. Vijayendiran. V, *Fundamentals of Microprocessor* – 8085, S. Viswanathan (Printers and Publishers) Private Ltd., 2002.