

II B.Sc (Compute Science) – IV Semester

Microprocessor and Its Applications

Unit – 1

Introduction to Microprocessor – Evolution of microprocessor – general architecture of microprocessor system – architecture of 8085 A – pin configuration – machine language and assembly language.

Unit – II

The 8085 instruction set - Instruction classification – instruction and data format – addressing modes – instruction set of 8085 – data transfer operations, arithmetic operations, logic operations, Stack operations, I/O operations and machine control operations – programming techniques such as looping counting and indexing.

Unit – III

Programming a Microprocessor – Program writing for 8-bit addition, subtraction, multiplication and division – 16 bit addition, subtraction, multiplication – BCD addition and subtraction – multibyte addition and subtraction – BCD to binary and binary to BCD conversion – octal to binary conversion – ASCII to BCD and BCD to ASCII conversions – ASCII to binary and binary to ASCII conversions – biggest and smallest – sorting and searching – block data transfer.

Unit – IV

Counters and time delays – Time delay using single register and register pair hexadecimal counter – generating pulse waveform. Timing sequences – opcode fetch cycle – memory read cycle – memory write cycle – I/O read cycle – I/O write cycle – WAIT state.

Unit – V

Data transfer methods - Memory organization – memory mapping – I/O mapping – Programmed data transfer – interrupt driven data transfer – polling techniques – DMA data transfer.

References

1. Introduction to Microprocessor – A.P. Mathur, TMH.
2. Microprocessor Architecture, Programming and applications with 8085 / 8085 A' – R.S.GAONKAR, Wiley Eastern Limited.