

Course BCA-11
COMPUTER ORGANIZATION

Unit 1: Digital Components

Flip-Flops, Counter, Register, Half adder-Full Adder, Half subtractor-Full subtractor, Coder-Decoder, Multiplexer, De-multiplexer, Magnitude Comparator

Unit 2: Instruction Sets and Addressing modes

Different Instruction Formats, Instruction Types, Instruction Execution, Assembly language notation, Different Addressing Modes(8085)

Unit 3: Input-Output Organization

Different I/O techniques (Programmed I/O, Interrupt-Driven I/O, Direct Memory Access), I/O Processors.

Unit 4: Internal Memory

Memory Hierarchy, Semiconductor RAM memories, Internal organization of Memory Chips, Read Only Memories

Unit 5: Cache and Virtual Memory

Locality of reference, Cache Memory, Mapping functions, Virtual Memory, Paging.

Unit 6: External Memory

Magnetic Disk, RAID, Optical memory, Magnetic tape

Unit 7: Pipelining

Introduction to Pipelining and Basics of Parallel Processing

Unit 8: CISC and RISC

CISC (Complex Instruction Set Computers), RISC(Reduced Instruction Set Computers)

Suggested Readings:

1. Computer System Architecture- M.Moris Mano (PHI publication)
2. Computer Organisation and architecture- Pal Chaudhary
3. **Structured computer organization- Tanenbaum**