

Computer Architecture Contents

Chapter 1 (Data Representation)	<ol style="list-style-type: none"> 1. Data Types 2. Number Systems 3. Decimal Representation 4. Alphanumeric Representation 5. $(r-1)$'s complement 6. (r')s complement 7. Fixed point Representation 8. Floating –Point Representation
Chapter 2 (Register Transfer and Microoperations)	<ol style="list-style-type: none"> 1. Register transfer language & operations 2. Arithmetic microoperations 3. Logic microoperations 4. Shift microoperations 5. Arithmetic logic shift unit
Chapter 3 (Basic Computer Organisation and Design)	<ol style="list-style-type: none"> 1. Instruction codes 2. Computer registers 3. Computer Instructions 4. Timing and control 5. Instruction Cycle 6. Memory reference instructions 7. Input/ Output and Interrupt 8. Design of basic Computer
Chapter 4 (Design of Control Unit)	<ol style="list-style-type: none"> 1. Control memory 2. Design of control unit <ul style="list-style-type: none"> • Microprogrammed • Hardwired • comparative study of both
Chapter 5 (Central Processing Unit)	<ol style="list-style-type: none"> 1. General Register Organisation 2. Stack Organisation 3. Instruction formats <ul style="list-style-type: none"> • Three-Address Instructions • Two-Address Instructions • One-Address Instructions • Zero-Address Instructions • RISC Instructions 4. Addressing Modes 5. Data transfer and manipulations 6. Program control 7. RISC and CISC architecture
Chapter 6 (Input-Output Organisation)	<ol style="list-style-type: none"> 1. Peripheral devices 2. I/O Interface 3. Asynchronous data transfer 4. Modes of transfer

	<ol style="list-style-type: none"> 5. Priority interrupt 6. DMA 7. I/O processor 8. Serial communication
Chapter 7 (Memory Organisation)	<ol style="list-style-type: none"> 1. Memory hierarchy 2. Main memory 3. Auxiliary memory 4. Associative memory 5. Cache memory 6. Virtual memory 7. Memory management hardware
Chapter 8 (Advanced concepts of Computer Architecture)	<ol style="list-style-type: none"> 1. Concept of pipeline 2. Arithmetic pipeline 3. Instruction pipeline 4. Vector processors and array processors 5. Introduction to parallel processing 6. Interprocessor communication & synchronization