



**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR  
(AUTONOMOUS)**

**Siddharth Nagar, Narayanavanam Road – 517583**

**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code :** Computer Organization (16CS510)

**Course & Branch :** B.Tech – CSE & CSIT

**Year & Sem :** II-B.Tech & II-Sem

**Regulation :** R16

**UNIT – I**

**BASIC STRUCTURE OF COMPUTERS**

1. Write in detail about the Functional Units of Computer with neat diagram? [12 M]
2. a) Write in detail about Data Transfer Instructions? [05 M]  
b) Write in detail about Program Control Instructions? [07 M]
3. a) What is Assembly Language and Write few Assembly Language Instruction [05 M]  
b) How the Basic I/O Operations work, explain in detail? [07 M]
4. Explain about the Structure of Bus and types of Bus with neat diagram? [12 M]
5. a) Explain about Instruction Cycle with neat diagram? [06 M]  
b) Write in detail about the Basic Operational Concepts with neat diagram? [06 M]
6. a) What is Computer Instructions and Explain about it. [06 M]  
b) What is Computer Registers and explain the types in it. [06 M]
7. Write in detail about Addressing Modes and its types? [12 M]
8. Write in detail about Data Manipulation Instructions and types in it. [12 M]
9. Explain in detail about Multiple Bus hierarchies and its categories with neat diagram? [12 M]
10. a) Explain detail about Instruction Cycle with neat sketch? [06 M]  
b) Write about Memory-Reference-Instruction? [06 M]

**UNIT – II****ARITHMETIC UNIT**

1. Draw the H/W Flowchart and H/W Algorithm for Add/Sub of SMR with an example. [12 M]
2. Explain the logic behind carry - look ahead addition with its circuit diagram and High level generate and propagate function circuit diagram. [12 M]
3. Draw the H/W Flowchart and H/W Algorithm for Multiplication for positive numbers with an suitable example. [12 M]
4. Explain the techniques in Fast Multiplication with example
  - a) Bit-pair recoding method of multipliers. [06 M]
  - b) Carry - Save Addition of Summands. [06 M]
5. Draw the H/W Flowchart and write algorithm for Division with a suitable example. [12 M]
6. Explain in detail about Floating point numbers, its operations and implementing it. [12 M]
7. Draw the H/W Flowchart and H/W Algorithm for Multiplication for signed numbers (Booth Multiplication) with a suitable example? [12 M]
8. Illustrate Bit-Pair recoding of multipliers derived from Booth recoding with example. [12 M]
9. Show the step by step signed-operand multiplication process using Booth algorithm when (-9) and (-13) are multiplied. Assume 5-bit registers to hold signed numbers and (-9) to be the multiplicand. [12 M]
10. Explain in detail about decimal arithmetic unit? [12 M]

**UNIT – III****BASIC PROCESSING UNIT**

1. a) Show that the block diagram of the hardware that implements the following register transfer statement  $P: R2 \leftarrow R1$ . [06 M]  
b) Explain about the way of constructing a 4 line common bus system using multiplexers with a neat diagram. [06 M]
2. Explain about the overall arithmetic circuit that performs all kinds of AMO with a neat diagram. [12 M]
3. Explain about the applications of Logic Micro Operations? [12 M]
4. Explain about Hardwired Control with the help of a neat diagram. [12 M]
5. Explain about Micro Programmed Control with Micro Program Example diagram [12 M]
6. Explain about Address Sequencing with neat diagram? [12 M]
7. a) Write about Bus transfer with neat diagram. [06 M]  
b) Write out Register Representations and way it is used. [06 M]
8. Explain in detail about Arithmetic Micro Operations? [12 M]
9. Write in detail about Logic Micro Operations with neat representations? [12 M]
10. Explain in details about all 3 types of Shift Register Operations? [12 M]

**UNIT – IV****MEMORY SYSTEM**

1. a) Explain about Memory Hierarchy? [07 M]  
b) Explain about Memory Management Requirements? [05 M]
2. What is Main Memory and what are the types in it, Explain in detail. [12 M]
3. Explain about Magnetic Disks in detail with neat diagram? [12 M]
4. Explain about any 3 Secondary Storage Devices in detail. [12 M]
5. Explain about ROM and its types? [12 M]
6. Explain in detail about Cache Memory with Page Replacement Algorithms. [12 M]
7. Explain about RAM and its types in detail? [12 M]
8. What is Virtual Memory? Discuss how paging helps in implementing virtual memory. [12 M]
9. What is Auxiliary Memory. What are all the types in it. [12 M]
10. a) List out some differences between RAM & ROM? [06 M]  
b) List out some differences between SRAM & DRAM? [06 M]

**UNIT –V****I/O ORGANIZATION**

1. a) Explain about Parallel Processing and its Types? [07 M]  
b) Explain the concept of Pipelining with clear example with neat sketch? [05 M]
2. a) Define parallel processing? How one can achieve parallel processing with single CPU. [06 M]  
b) Explain about characteristics of Multiprocessor? [06 M]
3. Explain briefly about Arithmetic pipeline with neat diagram and examples. [12 M]
4. Explain about Interconnection Structures in detail. [12 M]
5. Explain about Inter Processor Arbitration with neat sketch. [12 M]
6. What is DMA? Draw the block diagram for DMA controller and explain about DMA transfer in a computer. [12 M]
7. List out few I/O Interfaces and explain about them. [12 M]
8. a) List out the conflicts in pipelining and explain about it [06 M]  
b) Explain about 4-segment Instruction Pipeline with neat diagram [06 M]
9. Explain about Multiprocessor and its classification in detail [12 M]
10. Explain about Inter Process Communication & Synchronization in detail. [12 M]