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| **Unit-4** |  |
| 1. | Explain in detail two ways of designing control unit |
| 2. | What are the flag bits? Give the meaning of each and use of them in programming. |
| 3. | Write a note on: Adress Sequencing |
| 4. | Explain Instruction format for microinstruction in detail |
| **Unit -5** |  |
| 1. | Explain various types of interrupts. |
| 2. | Compare RISC with CISC architecture |
| 3. | Explain four types of instruction formats. |
| 4. | Explain various addressing modes in detail |
| 5. | Write a note on general purpose register organization |
| 6. | What are various data manipulation and data transfer instructions? |
| 7. | Describe the below addressing modes with examples a. Implied Mode b. Immediate Mode c. Auto increment and Auto decrement Mode d. Direct and Indirect Address Modes |
| 8. | Explain the three categories of computer instructions such as data transfer instructions, data manipulation instructions and program control instructions. |
| 9. | Write a program to evaluate the arithmetic statement: X=(A+B)\*(C+D) i. Using a general register computer with three address instruction. ii. Using a general register computer with two address instruction iii. Using an accumulator type computer with Zero address instruction |
| **Unit-6** |  |
| 1. | Explain four segment instruction pipelines. |
| 2. | Write a note on Flynn’s taxonomy |
| 3. | What is arithmetic pipeline? |
| 4. | Explain Instruction pipeline in detail |
| 5. | Explain three segment instruction pipelines in detail |
| 6. | Write a note on: Vector processing |
| **Unit-7** |  |
| 1. | Explain booth’s multiplication algorithm with a flowchart. |
| 2. | What is division process of two signed bit numbers? |
| 3. | Draw a neat diagram for hardware implementation of booth’s multiplication algorithm and explain. |
| 4. | Explain Floating Point Arithmetic with an example |
| **Unit-8** |  |
| 1. | With a neat diagram, explain the working principle of DMA. |
| 2. | Write a note on input-output interface. |
| 3. | What is asynchronous data transfer? |
| 4. | List modes of data transfer in I/O device. Explain any one mode in detail. |
| 5. | Write a note on: serial communication |
| **Unit-9** |  |
| 1. | Explain memory hierarchy in computer system with a diagram. |
| 2. | Write a note on: Auxiliary memory |
| 3. | Define Random Access Memory and types of RAMs present? |
| 4. | Discuss virtual memory organization |
| 5. | What is static RAM? Differentiate SRAM and DRAM |
| 6. | Explain how read and write operations are carried out in cache memory |