

- N.B. : (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions from Q. Nos. 2 to 7.
 (3) **Figures** to the **right** indicate **full** marks.

- | | | | |
|----|-----|--|----|
| 1. | (a) | Explain various methods of accessing the I/O devices. | 5 |
| | (b) | Compare paging and segmentation in brief. | 5 |
| | (c) | Explain restoring division algorithm. Draw its flowchart. | 5 |
| | (d) | What are the various addressing modes of CPU and explain any four in brief. | 5 |
| 2. | (a) | Draw a block schematic of microprogrammed Control Unit and explain in brief. State various methods of microprogram sequencing. | 10 |
| | (b) | Explain various bus arbitration methods in brief with relative advantages and drawbacks. | 10 |
| 3. | (a) | Explain in detail the various steps for ALU design. | 10 |
| | (b) | Explain Virtual Memory. Explain it with reference to locality of reference and address mapping. | 10 |
| 4. | (a) | Explain various methods for the design of Control Unit. | 10 |
| | (b) | State and explain various DMA transfer modes in brief with proper diagrams. | 10 |
| 5. | (a) | Explain various data dependant hazards in a linear pipeline with suitable example. | 10 |
| | (b) | Differentiate between SRAM and DRAM. Draw a typical DRAM cell and explain its operation for read and write. | 10 |
| 6. | (a) | What are different addressing modes in pentium processor ? Explain each with suitable examples. | 10 |
| | (b) | Explain the concept of Cache Memory. Explain any one method of Cache Mapping. | 10 |
| 7. | | Write short notes on (any two) : | 20 |
| | (a) | Bus Vectored Interrupt | |
| | (b) | Floating Point Formats | |
| | (c) | Hazards in Pipelined Architecture. | |