

Time: 3 hours

Marks: 80

N.B : (1) Question No.1 is compulsory.

(2) Attempt any three questions from remaining questions.

(3) Figures to the right indicate full marks.

- Q1(a) Draw register structure of IA-32 family 5
- (b) Compare RISC and CISC architectures. 5
- (c) Explain restoring division algorithm and draw its flowchart. 5
- (d) Compare paging and segmentation. 5
- Q2(a) Explain any one hardwired technique of control unit design. 10
- (b) Explain various modes of DMA transfer. 10
- Q3(a) Explain the advantages of pipelining. Explain various types of pipeline hazards and their solutions. 10
- (b) Explain various architectures of cache memory. 10
- Q4 (a) Explain various page replacement policies. 10
- (b) Explain the structure of serial and parallel ports. What are the methods to access it? 10
- Q5 (a) What is virtual memory ? Explain how paging is useful in implementing virtual memory. 10
- (b) Explain execution of a complete instruction with details. How are branch instructions executed? 10
- Q6(a) What are different addressing modes of IA-32 family? Explain with examples. 10
- (b) Explain single bus and multiple bus organization. 10
