

Time: 3 Hrs

Marks: 80

- 1) Question No.1 is compulsory.
- 2) Attempt any three question out of remaining five questions.
- 3) Assume suitable data whenever necessary.

- 1)
 - a) Represent $(78)_{10}$ and $(0.6125)_{10}$ in single precision floating point. 05
 - b) Explain basic structure of 4 stage Pipeline. 05
 - c) List Different I/O Access Methods. Explain any one detail. 05
 - d) Differentiate between SRAM and DRAM. 05

- 2)
 - a) Explain in detail organization of Cache Coherent – Non Uniform Memory Access. 10
 - b) What are the different types of pipeline Hazards. 10

- 3)
 - a) Explain Restoring Division algorithm and Perform $(14) \div (6)$ using it. 10
 - b) What is necessity of replacement algorithm? Show how pages are replaced between cache and main memory using replacement policies: 10
 - i) LRU
 - ii) FIFO
 - iii) LFU

- 4)

Explain Set Associative Mapping. Draw and explain a two-way set-associative mapping for cache that has lines of 16 bytes and a total size of 8 Kbytes. The 64-Mbyte main memory is byte addressable. 20

- 5)
 - a) What is micro programmed control? Explain in details. Write microinstruction for MOV R₀,[R₁]. 10
 - b) Describe Flynn’s Classification for parallel computer architecture. 10

- 6) Write Short Notes on
 - a) Superscalar Architectures. 10
 - b) Memory segmentation 10

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