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Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(CSE) / (IT) (Sem.–3)

COMPUTER ARCHITECTURE

Subject Code : CS-201

Paper ID : [A0451]

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a) What are the disadvantages of interrupts in computers?

b) What is the need of fast adders in computers?

c) The cache memory of 4 K words uses direct mapping with a block size of 16 words. How many blocks can the cache accommodate?

d) What do you understand by memory-mapped I/O?

e) What do you understand by I/O processor?

f) What are distributed computers?

g) List the functions of 8255.

h) What do you understand by parallel computers?

i) What do you understand by instruction pipelining?

j) What do you understand by Cache memory?

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SECTION-B

2. With the help of a flow chart discuss the process of addition of floating point numbers. Also explain the issues involved in its hardware implementation.

3. What is the need of microprogrammed control unit in computer? Discuss various operations performed by microprogram sequencer.

4. Describe the principle of operation and role of virtual memory in program execution. State the advantages of it also.

5. Discuss the approaches and techniques used for serial and parallel data transfer between two computer systems.

6. Consider four resisters A, B, C & D. Design a common bus data path with necessary logic circuit to perform the transfer of content of any register to self or any other registers. Draw the logic circuit also.

SECTION-C

7. Describe the characteristics of RISC and CISC Processor. Discuss the situations in which RISC and CISC processors are preferable.

8. Give the flow chart and data flow of multiplication for multiplying $(145)_{10}$ with $(178)_{10}$ by using booth's algorithm.

9. Write short notes on the following :

   a) SMIMD

   b) Pipelining in CPU design

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