

Roll No.

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [A0451]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 3rd)

COMPUTER ARCHITECTURE (CS - 201)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1)

(10 × 2 = 20)

- a) What is the concept of layers in architectural design?
- b) What do you mean by memory hierarchy? Briefly discuss.
- c) What is instruction pipelining?
- d) What is an I/O processor? Briefly discuss.
- e) Briefly explain an instruction format.
- f) What is cache memory?
- g) What is a multiprocessor? Explain the term SIMD.
- h) Differentiate between computer architecture and computer organization.
- i) What do you mean by interleaved memory?
- j) What is the role of shift register in digital Computer?

Section - B

(4 × 5 = 20)

- Q2)** How pipelining would improve the performance of CPU? Justify.
- Q3)** Discuss the Booth's Algorithm for binary multiplication.
- Q4)** Compare and Contrast Super pipelined machine and Super scalar machines.
- Q5)** What are Benchmarks? Discuss various kinds of Benchmarks. Give their significance in computer architecture.
- Q6)** Discuss DMA with help of schematic diagram of controller.

Section - C

(2 × 10 = 20)

- Q7)** Explain the various Addressing modes in detail.
- Q8)** Write short note on the following:
- (a) Parallel Computing.
 - (b) Distributed Computing.
 - (c) Serial and Parallel interface.
- Q9)** (a) What is the difference between I/O mapped input/output and memory mapped input/output. What are the advantages and disadvantages of each?
- (b) Software interrupt and hardware interrupt.
 - (c) Polling and Interrupt driven I/O.

