Roll No. ....

Total No. of Questions : 09]   **[Total No. of Pages : 02**

B.Tech. (Sem. – 3rd)

COMPUTER ARCHITECTURE

SUBJECT CODE : CS - 201

Paper ID : [A0451]

[Note : Please fill subject code and paper ID on OMR]

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)   *(8 × 2.5 = 20)*

a) What do you understand by floating point arithmetic?

b) Differentiate between register and memory.

c) What is pipelining?

d) How many clock cycles are required to process 100 tasks in five segment pipeline?

e) What is control memory?

f) List some properties of SIMD.

g) Differentiate between program interrupt and subroutine call.

h) What are the issues in computer design?

Section - B

                                             (4 × 5 = 20)

Q2) Discuss the importance of performance measure in computer hardware design. Also state the advantages and disadvantages of layers in architectural design.

Q3) What do you understand by locality of reference? How is it helpful in improving the performance of memory? Discuss with example.

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Q4) What do you understand by instruction pipeline? Discuss the major difficulties that cause the instruction pipeline to deviate from its normal operation.

Q5) Explain and show diagrammatically how address sequencing is done in micro-programmed control unit.

Q6) What do you understand by I/O processors? Discuss the importance of it.

Section - C

(2 × 10 = 20)

Q7) What are the benchmarks for evaluating the performance of a multiprocessor system (MIMD)? Explain with example.

Q8) Explain Booth's multiplication algorithm with example.

Q9) Write short notes on the following:

(a) Superscalar machines

(b) 8255 chip.