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Total No. of Questions : 07] [Total No. of Pages : 02

Paper ID [B0214]

(Please fill this Paper ID in OMR Sheet)

BCA (Sem. - 3rd)

COMPUTER SYSTEM ARCHITECTURE (BC - 403)

Time : 03 Hours **Maximum Marks : 60**

Instruction to Candidates:

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

Section - A

Q1) *(10 × 2 = 20)*

a) How Cache Memory is useful in memory hierarchy?

b) What do you mean by Isolated I/O Concept ?

c) Demonstrate the use of direct and indirect address with the help of suitable example.

d) Define the terms microprocessor & multiprocessor.

e) Explain the meaning of the memory – reference instruction AND to AC.

f) What is the difference between micro operation and micro instruction?

g) Give two examples of LOGICAL instructions.

h) What is the need of auxiliary memory?

i) Give an example of I/O Interface unit using block diagram.

j) What is the role of Microprogram Sequencer in a microprogrammed control unit?

Section - B

(4 × 10 = 40)

Q2) A Computer employs RAM chips of 256 × 8 and ROM chips of 1024 × 8. The computer system needs 2K bytes of RAM, 4K bytes of ROM, and four interface units, each with four registers. A memory-mapped I/O configuration is used. The two highest-order bits of the address bus are assigned 00 for RAM, 01 for ROM, and 10 for interface registers. Draw a memory address map for the system.

Q3) A Computer uses RAM chips of 1024 × 1 capacity. How many chips are needed, and how should their address lines be connected to provide a memory capacity of 1024 bytes? Also explain in words how the chips are to be connected to the address bus?

Q4) Illustrate the influence of the number of addresses on computer programs by evaluating the following statement using zero, one, two and three address instructions.

X=(A+B)*(C+D)

Q5) Discuss in detail the architecture of 8085 microprocessor along with pin configuration diagram.

Q6) Explain in detail all the phases of Instruction Cycle.

Q7) Give the block diagram of a DMA Controller and also explain the procedure of DMA transfer in a computer system.

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