

Subject Code—4273

M.C.A. (Second Year) EXAMINATION

(5 Years Integrated Course)

(Re-appear)

MCA-204

**COMPUTER ORGANIZATION AND
ARCHITECTURE**

JUN 2006

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Design a 4-bit combinational circuit decrementor using four full adder circuit.
- (b) Draw the flow chart for instruction cycle.

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2. (a) Explain the function of the following memory reference instructions :
 - (i) STA
 - (ii) BUN
 - (iii) BSA
 - (iv) LDA
- (b) Draw and explain the process of address selection for control memory in microprogrammed control unit.
3. Design a microprogrammed control unit along with microprogrammed sequencer.
4. (a) List out the instructions of each type of addressing modes available.
- (b) Differentiate between different types of interrupts available in CPU.
5. Differentiate between the following :
 - (a) RISC and CISC
 - (b) Hardwired and Microprogrammed Control Unit.
6. Explain the following modes of data transfer techniques in CPU :
 - (a) Programmed I/O
 - (b) Interrupt Driven I/O
 - (c) DMA.

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7. (a) Discuss different mapping techniques in cache memory system.
- (b) Explain the concept of virtual memory system for execution of program.
8. Write short notes on the following :
- (a) Stack Organization
- (b) Shift Microoperations
- (c) Auxiliary Memory.

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