Roll No. | | | | | | | | | | | | Total No. of Pages : 2

Total No. of Questions : 09

MCA (2012 & Onwards) (Sem.–1)

COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE

Subject Code : MCA-103

Paper ID : [B0130]

Time : 3 Hrs. Max. Marks :100

INSTRUCTION TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TWENTY marks each and students has to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**
3. Use of non-programmable **scientific calculator** is allowed.

SECTION-A

1. (a) What is "Stored Program Organization" ? When it was introduced ? Explain in detail. (10)

   (b) What are Addressing Modes ? Explain various types of addressing modes with suitable examples. (10)

2. (a) Explain Hardwired based design of Control Unit in detail with proper circuits. (10)

   (b) What are Interrupts ? When they are executed ? Explain their various types. (10)

SECTION-B

3. (a) Define Vector Processing with its importance. Also explain various vector operations. (10)

   (b) Compare Isolated and memory mapped I/O in detail. (10)

4. (a) How Parallel Processing is done ? Explain in detail. (10)

   (b) Explain DMA Controller and DMA Transfer. (10)

SECTION-C

5. (a) Explain memory organization in detail. (10)

   (b) What is ''Page Replacement'' Technique ? How it differs from segmented page mapping. Explain. (10)

6. (a) What is Cache ? Explain various levels of Cache. (10)

(b) Explain any two memory management techniques. (10)

SECTION-D

7. (a) Explain the role of multiprocessors in computer functioning along with its various characteristics. (10)

(b) What is Assembly language ? How I/O instructions are prouned is assembly language ? Explain. (10)

8. Write short notes on :

(a) Hypercube Interconnection. (7)

(b) Addressing modes of 8085. (7)

(c) Arithmetic and Logical Instructions (6)

SECTION-E

9. Write short notes on :

(a) Logical Instructions

(b) Synchronization

(c) Crossbar switch

(d) 8-bit micro-processor.

(e) Multiport Memory

(f) Cache Coherence

(g) Programmed I/O.

(h) Array processors

(i) Reverse Polish Notation

(j) Reference Instructions. (2×10=20)