

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

MCA (Sem.-1<sup>st</sup>)

**COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE**

Subject Code : MCA-103 (2012 Batch)

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 carrying TWENTY marks in all.
3. Use of non-programmable scientific calculator is allowed.

**SECTION-A**

1. (a) Discuss Basic Computer Organization. Give details of major components like bus, memory, CPU, Control and Logic Unit etc. Draw a diagram to explain various components.  
(b) How the computer instructions are timed and controlled?
2. Write detailed note on hardwired based design of control unit.

**SECTION-B**

3. What do you understand by Parallel Processing? Discuss in detail how it helps in reducing the running time. Which kind of tasks can be parallelized?
4. What are array processors? Explain with the help of diagram and example.

**SECTION-C**

5. (a) Write a note on Direct Memory Access Controller.  
(b) Write a note on Priority Interrupt Controller.

6. Cache memory helps in matching the speed of CPU and memory access. Discuss different types of cache memories available along with their characteristics.

#### **SECTION-D**

7. Write notes on :
  - (a) Multistage Switching Network
  - (b) Hypercube Interconnection
8. Discuss various Logical Instructions, Machine Control Instructions and Program Control Instructions in the Assembly language.

#### **SECTION-E**

9. Write short notes on :
  - (a) Addressing Modes
  - (b) Time shared common bus
  - (c) Associative Memory Page Table
  - (d) Interrupt Cycle
  - (e) Strobe Control
  - (f) Instruction Pipeline
  - (g) Memory Stack
  - (h) Register Reference Instructions
  - (i) Adder