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Total No. of Pages : 02

Total No. of Questions : 09

**MCA (2013 and 2014 Batch) (Sem.-1)**  
**COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE**  
**Subject Code : MCA-103**  
**Paper ID : [B0130]**

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTIONS 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.

**SECTION-A**

1. Discuss in detail the stack organization and explain how expressions are evaluated using stack organization.
2. Explain the various characteristics of RISC architecture and also explain how overlapped windows are used in procedure calls.

**SECTION-B**

3. What do you mean by parallel processing? What are the different types of parallel processors? Explain.
4. a) What is Input-output Interface? Briefly discuss and compare the following I/O schemes :
  - (i) Programmed I/O
  - (ii) Interrupt driven I/Ob) What is an interrupt? How is an interrupt handled?

**SECTION-C**

5. Define Cache memory. What are the various memory mapping procedures involving cache memory?
6. Explain various page replacement policies in detail.

### SECTION-D

7. What are Multiprocessors? What are its characteristics? Discuss interconnection structures in detail.
8. Discuss the addressing modes of 8085.

### SECTION-E

**9. Answer briefly :**

- a) Change  $(A+B)*C$  in reverse Polish notation.
- b) What are the differences between external and internal interrupts?
- c) What is an effective address or offset?
- d) What are the various overheads in pipelining processing?
- e) Why is cache coherence important for shared-memory multi-processor systems?
- f) What is the need of an array processor in the execution of a vector instruction?
- g) What do you mean by memory organization?
- h) What is the difference between paging and segmentation?
- i) Differentiate between synchronous and asynchronous data transfer.
- j) What is virtual memory?