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Total No. of Pages : 02

Total No. of Questions : 07

**B.Sc. (CS) (2013 & Onwards) (Sem.-2)**  
**COMPUTER SYSTEM ARCHITECTURE**  
Subject Code : BCS-206  
Paper ID : [A2610]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and a student has to attempt any FOUR questions.

**SECTION-A**

1) Answer briefly :

- a) Define SISD, SIMD and MIMD.
- b) What is the role of data bus?
- c) Explain the interrupt cycle.
- d) Differentiate between direct and indirect address instructions.
- e) Explain DMA controller.
- f) Explain the principle of locality.
- g) Differentiate between logical and physical addresses.
- h) How many  $128 \times 8$  RAM chips and  $512 \times 8$  ROM chips are required to provide a memory capacity of  $4096 \times 16$ ?
- i) Explain the FIFO page replacement algorithm in brief,
- j) Name the commonly used mobile devices architectures.

## SECTION-B

- 2) Discuss with examples various arithmetic, logic and shift micro-operations.
- 3) Explain the various types of instructions with examples.
- 4) Define and distinguish between Hardwired and Micro-programmed control.
- 5) What is Input-output Interface? Briefly discuss and compare the following I/O schemes:
  - a) Programmed I/O
  - b) Interrupt initiated I/O
- 6) Discuss in detail the stack organization and explain how expressions are evaluated using stack organization.
- 7) Explain the various cache memory mapping techniques.