

Code: 9F00203

MCA II Semester Regular & Supplementary Examinations, October/November 2013

COMPUTER ORGANIZATION

Time: 3 hours

Max Marks: 60

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Represent the number $(+46.5)_{10}$ as a floating point binary number with 24 bits. The normalized fraction mantissa has 16 bits and the exponent has 8 bits.
(b) Draw the diagram of a 4-bit adder-subtractor and explain its operation.
- 2 (a) What do you understand by memory hierarchy? Compare them briefly on the basis of cost, speed, size and performance.
(b) Explain various types of mapping procedures related to the cache memory organization.
- 3 Explain the basic organization of a micro programmed control unit and the generation of control signals using micro program.
- 4 (a) State any four addressing modes used in 8086 microprocessor. Identify addressing modes used in each of the following 8086 instructions:
(i) MOV BX, 0354h.
(ii) ADD AL, [BX+04J].
(iii) MOV AX, [BX+SI].
(iv) MOV AX, [BX+SI+04].
(b) Discuss various types of instructions in 8086 with suitable examples.
- 5 (a) Explain the following data transfer instructions with an example:
(i) MOV (ii) IN (iii) XCHG (iv) XLAT
(b) Describe the flags of 8086 processor with suitable examples.
- 6 (a) Give a brief note on various peripheral devices.
(b) Discuss the operation of DMA controller with a neat block diagram.
- 7 (a) What is pipelining? Demonstrate the pipeline organization with an example.
(b) Explain RISC pipeline in detail.
- 8 (a) Differentiate between tightly coupled and loosely coupled multiprocessors.
(b) What are the various mechanisms adopted in multiprocessor systems for achieving the synchronization? Explain.
