

COMPUTER ORGANIZATION

(Common to ECC and CSE)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) What is system software? What are the functions performed by system software?
(b) Explain how error is detected and corrected using hamming code.

- 2 (a) Explain data transfer and manipulation instructions.
(b) A relative mode branch type of instruction is stored in memory at an address equivalent to decimal 750. The branch is made to an address equivalent to decimal 500.
(i) What should be the value of the relative address field of the instruction (in decimal)?
(ii) Determine the relative address value in binary using 12 bits.
(iii) Determine the binary value in PC after the fetch phase and calculate the binary value of 500. Then show that the binary value in PC plus the relative address calculated in part (ii) is equal to the binary value of 500.

- 3 (a) What is the purpose of control memory?
(b) Explain the basic tasks performed by a micro programmed control unit.

- 4 (a) Explain the flow chart for decimal division.
(b) Explain decimal arithmetic micro operations.

- 5 (a) The access time of the main memory is 700 ns and the access time of the cache memory is 100 ns. The hit ratio for the read access is only 0.8. What is the average access time of the system considering only memory read cycles?
(b) Explain memory address map.

- 6 (a) Explain PCI bus in detail.
(b) Bring out the features of RS 232.

- 7 (a) Define array processors? Explain the types of array processors with neat sketches.
(b) Explain data dependency constraint.

- 8 (a) Explain serial arbitration logic.
(b) Give short notes on the system bus.
