

Code : MC1.2

**MCA I Semester Supplementary Examinations, August 2010**  
**COMPUTER ORGANIZATION**  
 (For students admitted in 2004 & 2005 only)

Time: 3 hours

Max Marks: 60

**Answer any FIVE questions**  
**All questions carry equal marks**

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1. (a) Define computer organization. Draw the block diagram of a digital computer and explain each unit of a computer.
- (b) Given the Boolean function  

$$F = \bar{x}yz + x\bar{y}z + xy\bar{z} + xyz$$
  - i. List the truth table of the function.
  - ii. Draw the logic diagram using the original Boolean expression.
  - iii. Simplify the algebraic expression using Boolean algebra
  - iv. List the truth table of the function from the simplified expression and show that it is the same as the truth table of original function.
  - v. Compare the number of gates between simplified and original expression.
2. (a) What is mean by multiplexer? Explain with simple figure and construct a 8-to-1 line multiplexer with two 4-to-1 line multiplexers and one 2-to-1 line multiplexer.
- (b) With block diagram explain about the RAM and specify how many 128x8 memory chips are needed to provided a memory capacity of 4096x16?
3. Explain about error detection codes and derive the circuits for a 3-bit parity generator and 4-bit parity checker using an even parity bit.
4. (a) How register transfer takes place in CPU? Explain with help of timing diagram.
- (b) What is mean by three-state Bus buffer? Explain with diagram of a bus system.
5. With flowchart explain about floating point addition and subtraction.
6. What is the need of addressing modes? With example, explain about addressing modes.
7. (a) What is the use of auxiliary memory in your system? Explain any one auxiliary memory.
- (b) What is the difference between memory and associative memory? Explain with diagram and give advantages and disadvantages of associative memory.
8. (a) Write a short notes on asynchronous serial transmission.
- (b) Briefly explain about modes of transfer.

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