Code No.: 6934/N

FACULTY OF INFORMATICS

M.C.A. I Year II Semester (Main) Examination, July 2010

(New)

COMPUTER ORGANIZATION

Time : 3 Hours] [Max. Marks : 80

*Answer **one** question from each unit.*
All questions carry equal marks.

UNIT – I

1. (a) Simplify the Boolean function :
   $F(A,B,C,D) = \Sigma(0,1,2,5,8,9,10)$ using four variable Karnaugh map.

   (b) A sequential circuit has two D flip-flops A and B, two inputs x and y and one output Z. The flip-flop input equations and circuit output are as follows:
   $D_A = x^1y+xA$, $D_B = x^1B + xA$, $Z = B$

   (i) Draw the logic diagram of the Circuit.

   (ii) Tabulate the state table.

Or

2. (a) What is meant by a decoder? Construct a 2 – to – 4 line decoder with an enable input using NAND gate.

   (b) Explain about error detection codes with suitable examples.

UNIT– II

3. (a) Explain about 4–bit binary subtractor and 4–bit binary incrementer using diagrams.

   (b) Explain the organization of control unit of Basic Computer.

Or

4. (a) Draw and explain about flowchart for Instruction Cycle.

   (b) Explain about design of Accumulator logic with suitable diagrams.

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UNIT – III

5. Define an assembler. Explain about first pass and second pass of assembler using flow charts.

Or

6. (a) Write an assembly program to multiply two positive numbers.

   (b) Differentiate between hard wired control unit and microprogrammed control.

UNIT – IV

7. Explain in detail about various addressing modes in detail.

Or

8. Discuss about Booths Multiplication Algorithm by taking numerical example and draw flow chart for it.

UNIT – V

9. (a) What is meant by Asynchronous data transfer? Explain about Hard shaking in detail.

   (b) Explain about working of DMA controller with block diagram.

Or

10. (a) What is Cache memory? Discuss about set-associative mapping and its use.

    (b) Explain briefly about virtual memory.
