07821

# BACHELOR IN COMPUTER APPLICATIONS

Term-End Examination

December, 2011

## CS-64 : INTRODUCTION TO COMPUTER ORGANISATION

*Time : 3 hours*　　　　　　　*Maximum Marks : 75*

**Note :** *Question No. 1 is* **compulsory.** *Answer any* **three** *questions from the rest.*

1. (a) What is BCD ? Explain how decimal    5
numbers are represented in computer
system using BCD ?

   (b) What is a microprocessor ? What is need of    5
microprocessor ? Explain how an
instruction is executed by a microprocessor ?

   (c) Simplify the Boolean expression given below    5
using K-map.

   $$F(x,y,z,w) = x.y.z.w + \bar{x}.y.\bar{z}.w$$
   $$+ \bar{x}\,y + x\bar{y}z + x\bar{w}$$

   Also, draw the logical circuit for the
simplified boolean expression.

   (d) What is control bus ? Explain how it is    5
different from address and data buses ?

(e) What is control unit ? Draw a general model of control unit. List various input / output of control unit.   **5**

(f) What are different external memory ? Explain seek and latency time in respect to a hard disk.   **5**

2. (a) What is logical shift operation ? Explain difference between logical shift and arithmetic shift with the help of an example of each.   **5**

(b) What is Direct Memory Access (DMA) ? Explain the use of Data Register and Address Register in DMA.   **5**

(c) What is instruction cycle ? Explain the steps in a simple instruction cycle. Also explain how operations are performed during a fetch cycle.   **5**

3. (a) What is an instruction set ? Explain elements of an instruction set.   **5**

(b) What is master-slave flip-flop ? Explain an application of master-slave flip - flop with the help of an example.   **10**

4. (a) What is polling ? Explain advantages of polling.  5

   (b) Explain hamming error - correcting code with an example.  5

   (c) What is adder ? Draw logic diagram for a full adder.  5

5. (a) What is random access memory (RAM) ? Explain working of RAM with the help of its logic diagram.  5

   (b) What is stack in 8086 ? Explain the segment and registers used for storing stack. Write program (Assembly) for defining and initializing stack.  5

   (c) What are Co-processors ? Explain general structure of CPU - Coprocessor with the help of a diagram.  5

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