No. of Printed Pages : 3

CS-64

BACHELOR OF COMPUTER APPLICATIONS (PRE - REVISED)

07714

Term-End Examination

June, 2013

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) Define the term Interrupt and its various classes with the help of a diagram, explain how interrupts are handled when they occur while an instruction is being executed ? 7

   (b) Explain the following instructions of 8086 microprocessor with the help of an example. 10

   (i) MOV
   (ii) ADD
   (iii) MUL
   (iv) CMP
   (v) DIV

   (c) What are Microinstructions ? Explain the three formats of microinstructions with the help of diagrams. 7

   (d) Simplify the following function using Karnaugh map and draw the circuit using AND, OR and NOT gates. 6

   $F(A, B, C, D) = \sum (1, 3, 5, 7, 9, 11, 13, 15)$

2. (a) Explain any four addressing schemes. 4

(b) What is the utility of the Bus Interconnection ? Explain the three methods of Bus Arbitration. 7

(c) Explain the direct mapping scheme for cache memory with the help of a diagram. 4

3. (a) Write a program in 8086 Assembly language that converts a 2 digit packed BCD number into binary equivalent. 8

(b) What are micro-operations ? Explain any two types of micro-operations available in digital computers. 7

4. (a) What are Flip-flops ? Explain the features of RS-flip-flop and D-flip-flop. 7

(b) What are Arithmetic Processors ? Explain any mechanism for connecting arithmetic processors to the CPU. 3

(c) Explain how Far and Near Procedures are defined and called in 8086 processors, with the help of an example. 5

5. (a) Perform the following operations using binary arithmetic : 9

(i) $73 + (-82)$ using signed 2s complement notation.

(ii) $(58.225)_{10} \rightarrow (?)_2$

(iii) $(11001011010)_2 \rightarrow (?)_8$

(iv) $(6A.52)_{16} \rightarrow (?)_2$

(v) $(101101.1011)_2 \rightarrow (?)_{10}$

(vi) $(FFAB)_{16} \rightarrow (?)_{10}$

(b) What are the factors generally considered for selection of the addressing bits while designing instruction formats ? 3

(c) Explain how physical address is calculated in 8086 microprocessor ? 3