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CS - 64

BACHELOR OF COMPUTER APPLICATIONS (BCA) (PRE-REVISED)

Term-End Examination

CS - 64 : INTRODUCTION TO COMPUTER ORGANISATION

Time : 3 Hours] *[Maximum Marks : 75*

Note: Question 1 is compulsory. Attempt any three questions from the rest.

1. a) Simplify the Boolean expression given below using K-map: 5
   f (A,B,C,D) = Symbol (0, 2, 4, 6, 8, 10, 12, 14, 15)

   b) Discuss the architecture of a Von Neumann machine, with the help of a diagram. 5

   c) What is a Full Adder? Write the truth table for a Full Adder and draw its logic diagram. 6

   d) What is an Instruction for a computer system? Explain the factors considered while deciding the instruction length. 4

   e) Discuss the use and importance of

subroutine CALL and RETURN. 5

f) Explain the use of "XCHG" and "INC" instructions, with the help of an example of each. 5

2. a) "Most of the Semiconductor Memories are packaged in chips." Explain the 2D and 2 1/ D chip organisations, with suitable diagrams. 6

b) What is RAM? Draw and discuss the logic diagram of a RAM cell. 5

c) Explain the use of "Don't Care" conditions in K-maps. 4

3. a) Do the following conversions - 10

(Note: Subscripts represent the base of the respective numbers.)

(i) $(230.5)_8 \rightarrow (?)_2$

(ii) $(1011100.111)_2 \rightarrow (?)_{10}$

(iii) $(72.25)_{10} \rightarrow (?)_2$

(iv) $(2FF9)_{16} \rightarrow (?)_2$

(v) $(624)_{10} \rightarrow (?)_2$

b) Write a 8086 assembly language programme to add four liyte sized numbers stored in an array in the memory. Make suitable

assumptions. 5

4. a) Draw and discuss the logic diagram and characteristic table of a clocked R-S flip flop. 5

b) Explain the following addressing modes with the help of an example each. 6

(i) Immediate addressing

(ii) Direct addressing

(iii) Register addressing

c) Why are buses required in the CPU? Explain the three buses used in the CPU. 4

5. Explain the following (any five). 15

a) AND Logic microoperation and OR logic microoperation

b) Multiplexer

c) Control Memory

d) Interrupts

e) DOS function calls in 8086 microprocessor

f) Flags in 8086 microprocessor

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