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CS-64

BACHELOR OF COMPUTER APPLICATIONS
(Pre-Revised)
Term-End Examination

01204

December, 2014

CS-64 : INTRODUCTION TO COMPUTER ORGANISATION

Time : 3 hours *Maximum Marks : 75*

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

1. (a) Perform the following as stated : *10*

(i) Convert $(F2)_{16}$ into its equivalent binary and decimal number.

(ii) Add 75 and 28 in 8-bit registers using signed 2s complement notation.

(iii) Substract 32 from 74 using 2's complement notation.

(iv) Convert $(1100101)_2$ into its equivalent octal and hexadecimal notation.

(v) Convert $(812{\cdot}5)_{10}$ into binary.

(b) Design OR and NOT operations using the NAND gate. *6*

(c) Explain the method of passing of parameters through stack with the help of an example. *6*

(d) Explain how Floating Point numbers are represented in a computer. *4*

(e) Simplify the following using Karnaugh Map and represent the result in Boolean expression $F(A, B, C) = \Sigma (1, 3, 5, 6, 7)$ *4*

2. (a) Write a program in 8086 Assembly language to convert lower case alphabets present in the memory to upper case alphabets. *5*

(b) Define the term Interrupt. Explain the process of resolving the condition when multiple interrupts occur in a system at the same time. *5*

(c) Explain the structure of I/O Module with the help of a diagram. *5*

3. (a) Explain the three Input/Output techniques with the help of suitable diagrams or flow charts. *9*

(b) What is ALU ? Explain the implementation of one stage of ALU with shift capability. *6*

4. (a) What is a Hardwired Control Unit ? 3

(b) State the advantages of IC Technology. 3

(c) Discuss the implication of overflow in Arithmetic results. 3

(d) State the functions of MAR, MBR, PC and IR Registers in the Instruction Cycle. 3

(e) Simplify the Boolean function 3

$$F = \overline{(\overline{A} + \overline{B})} + \overline{(A + \overline{B})}$$

5. (a) What are Magnetic Disks ? Describe their structure, layout and head mechanisms. 7

(b) Explain the syntax and working of the following instructions : 8

(i) PUSH

(ii) CMP

(iii) ROR

(iv) LOOP