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CS-64

BACHELOR OF COMPUTER APPLICATIONS

(BCA) (Pre-Revised)

Term-End Examination

00833 **December, 2018**

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.*

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1. (a) Simplify the following Boolean functions using Sum-of-Product form, by K-map : 6
$F(A, B, C, D) = \Sigma(0, 2, 3, 5, 7, 8, 10, 13, 15)$

(b) Write a program in 8086 Assembly language to convert a 2-digit BCD number into its binary equivalent. 6

(c) Explain the Indexed Addressing Scheme with the help of an example. 4

(d) Explain how floating point numbers are represented in computers. 5

(e) Why is 2's complement preferred in binary arithmetic ? 4

(f) What is an interrupt ? Why are they required ? List three common interrupts of a computer. 5

2. (a) What is a microprocessor ? What is the need of microprocessors ? Explain how an instruction is executed by a microprocessor. 5

(b) Explain the features of Von Neumann machine with the help of a diagram. 5

(c) Write an 8086 assembly language program to swap two numbers stored in some memory location. 5

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

(b) What is Polling ? Explain the advantages of polling. 5

(c) What is the need of segment registers in 8086 microprocessor ? Explain how a 16 bit offset stored in an instruction is converted to 20 bit address using segment register. 5

4. (a) What are Flip-flops ? Describe the R-S and J-K Flip-flops with the help of their logic diagrams. 7

(b) Explain syntax and functionality of any ***four*** of the following assembly instructions for 8086 microprocessor : *8*

(i) ADD

(ii) MOV

(iii) CMP

(iv) SAR

(v) LOOP

5. Explain the following with the help of suitable diagram, program segment or illustration : *15*

(a) Vertical microinstruction

(b) Machine startup

(c) Shift micro-operation

(d) Subroutine call in 8086 microprocessor

(e) TEST instruction in 8086 microprocessor
