Capital University of Science and Technology

Department of Computer Science

CS 2523 – Computer Organization and Assembly Language

QUIZ NO. 2: Basics of Computer Organization and Assembly Language

Section# 4

CLO: 1. Define concepts in the design of microprocessor as state machine and designing its data path and its controller.

Semester: Fall 22		**Max Marks:** 10
Instructor: Ms. Tayyaba Zaheer	**Date:** October 24, 2022	**Max Time:** 10 Minutes
Name:	**Reg. No.**	

Question No.1 [04 Marks]

Please choose the best possible option:

1. (01 mark) To convert Hexadecimal 111_{16} to binary would result in:
   a) 111_2
   b) 001001001_2
   c) 0001000100012
   d) None of the mentioned

Solution: d

2. (01 mark) Considering 1001 a decimal, can be represented as:
   a) 1001_{10}
   b) 1001_b
   c) Both a & b
   d) None of the mentioned

Solution: a

3. (01 mark) 4BA42A00 is not a positive quad-word.
   a) True
   b) False
   c) Depends on the underlying machine
   d) None of the mentioned

Solution: a

4. (01 mark) Choose the most efficient signed numbers representation to perform arithmetic operations on the numbers:
   a) Sign-magnitude

   b) 1's complement

   c) 2's complement

   d) None of the mentioned

Solution: c

Question No. 2 [06 Marks]

The address of var1 is 245_{16}. The address of the next variable after var1 is 590_{10}. How many bytes are used by var1?

Solution:

$590_{10} = 24E_{16}$

$245_{16} = 581_{10}$

Hexadecimal subtraction

$24E_{16} - 245_{16} = 9_{16}$

Decimal subtraction

$590_{10} - 581_{10} = 9_{10}$