Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Final Exam Examination, Fall 2020 @ DIU Blended Learning Center

Course Code: CSE112 (Day), Course Title: Computer Fundamentals

Level: 1 Term: 1 Section: PC-B, PC-C

Instructor: RKR Modality: Open Book Exam

Date: Thursday 25 March, 2021 Time: 12:00pm-02:30pm

Hours (2:30) to support online open/case study-based assessment Marks: 25

Directions:

- **Students need to go through the CASE STUDY shown in this exam paper.**
- **Analyze and answer specific section based on your own thinking and work.**
- **Do not share as this will be treated as plagiarism by Blended Learning Center.**

Answer all the Questions

1. a) How data become information explain it in your own word. 2
   b) Describe any three of the five basic operations of a computer system with proper diagram. 3

2. Convert the following numbers into others number systems: 5
   a. 1101.1010_2 = (?)10
   b. $A2F_{16}$=(?)$_8$
   c. 110110111011_2=(?)$_{16}$
   d. 235_6=(?)$_4$
   e. 521_{10}=(?)$_8$

3. a) Perform the following arithmetic operations: 2.5
   I. $26C_{16}$ - $1AF_{16}$
   II. $10011001_2 \div 101_2$
   b) Show the following equality using binary arithmetic operations: 2.5
   $101_2 \times 111_2 = 11011_2 - 10111_2$

4. Let us consider an 8-bit normalized floating-point representation, where 5 bits are used for the mantissa and rest of the bits for the exponent. Now, show how the number 0.0011_2 would be the stored in memory. Then Calculate the range of numbers that may be stored using this mode of representation. 5

5. a). Using 8-bit 2s complement representation subtract -5_{10} from $-8_{10.}$ 2

   b). Find the complement of 345_8 and How many bits are equal to 1 Kilobyte? 2

   c). For 4-bit 2s complement representation, write a number in decimal that does not have the 2s complement representation of the same number with opposite sign. 1

Best of Luck