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Daffodil International University

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Midterm Exam Examination, Summer 2021 @ DIU Blended Learning Center

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

Level: 1 Term: 1 Section: PC-C

Instructor: MUR Modality: Open Book Exam

Date: Monday 12 July, 2020 Time: 09:00am-11:30am

Two and half hours (2:30), Marks: 25

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1. a) What is the major difference between the 3rd and 5th generation computers? 2.5

   b) Why register memory is fastest- explain? 2.5

   c) Your best friend Masum took admission to CSE Department this semester and going to start his online classes. He is willing to build a Desktop PC and asked for your help. Now your task is -note all the required components of a computer and also mention why that is needful for Masum.[NB: Your answer must involve technical terms] 5

2. a) Convert the following numbers: 3
      i. $(364.46)_8 = (?)_2$
      ii. $(AC0D)_{16} = (?)_8$
      iii. $(105.46)_6 = (?)_3$

   b) Do the following operations: 3
      i. $1011011_2 \times 1001_2$
      ii. $101010011_2 \div 110_2$
      iii. $A03FD_{16} - AB0C_{16}$

   c) Perform the following: 2
      i. Subtract 54 from 79 in 1's complement method.
      ii. Subtract -18 from -7 in 2's complement method.

   d) Write an algorithm and a flow chart to find the sum of all the natural numbers till N, where N is the input value from the user.[NB: Natural Numbers: 1,2,3…..] 5

   e) Consider a 16-bit floating-point number. Where 9 bits are used for mantissa and 7 bits for exponent (including the sign bits). Now show how the number [0.01X] would be stored in memory. Calculate the range of numbers by using floating-point representation. [Here X will be the binary conversion of the last 2 digits of your ID] 2

"The bad news is time flies. The good news is you're the pilot" - Michael Altshuler

Good Luck!