



Daffodil International University

Faculty of Science and Information Technology

Department of CSE

Mid-Term Examination, Semester: Spring 2022

Course Code: CSE 411 (Day)

Course Title: Computer Architecture & Organization

Section: All

Time: 01:30H

[Answer all the Questions. Obtain marks in the right side]

Full marks: 25

Question 1 (CO1, CO2)

13 Marks

- What is **Batch Processing System**? What are the **limitations** of the **First-Generation Computer**? [2]
- Third Generation came up with **IC** component. One of the outcomes of this components is **IBM360**. Try to express your understanding on **IBM360** with a proper diagram. [4]
- Define the term "**Instruction Cycle**". [1]
- There are 3 design levels and each design level there are many types of components. Can you classify the following components according to their design level? [2]

Projector, NAND gate, Adder, Pen drive, counter, Cache Memory

- Imagine you are an engineer of **Tesia Incorporation**. You are designing a system of Gate level. in the system there are several logical and arithmetic functions. You *are required to implement* a function of **Exclusive-NOR** and represent it as a system. As an engiucer you have to thoroughly represent it in a general from the **Block diagram** and have to *justify* with a truth table. As a brilliant engineer how would you solve this problem? Explain it. [4]

Question 2 (CO2, CO3)

12 Marks

- Suppose a word of three characters "**TN6**". Now convert the **second letter** into octal, first one into **hexadecimal**. [2]
- Write down the **most immediate number** of the followings: [2]
 - 10F (Hexadecimal)
 - 127 (Octal)
 - 01111111 (Binary)
- Write down the negative number of 96 (base 10) into **binary**? [1]
- Suppose you have 10 **instructions** to execute. Now execute these instructions in **normal manner** as well as with **Instruction pipelining**, and elaborate which way works **better** and how? [4]
- Suppose you have following **instruction** to be execute: **Store 56781234H, ABCDEAH**. Now perform an operation to store the data 56781234H in address ABCDEAH using both, **Big Endian Mode** and **Little Endian Mode** [3]