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Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science and Engineering

Mid Semester Examination, Fall-2024

Course Code: CSE335 Course Title: Computer Architecture and Organization

Level: L3 Term: T1 Batch: 63

Time: 1.5 Hours **Marks: 25**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	a)	Throughout history, people have relied on their brains for calculations. In the past, they used simple tools like fingers or pebbles for counting. Explain the main elements of computer in brief with functions.	[1]	CO1
	b)	The development of computers has gone through different generations, each generation marked by significant advancements in terms of technology and architecture. Now, compare the main characteristic features of 1st and 2nd generation electronic computer.	[3]	
2.	a)	Suppose, you are finding the best instruction method to make the processor fast as possible to process. Now, apply the 2-operand and 1-operand instruction operation technique in the computer architectures for the following instruction: $g \leftarrow x + h / c * d$ ..ssume that all data are in registers.	[4]	CO3
	b)	Illustrate how instruction formatting can be fixed and variable depending on the .microprocessor design with diagram and examples for both format.	[4]	
	c)	Apply the addressing techniques if you want to store a data "54D5607" into "ABCDEFH" address in a computer memory.	[4]	
3.	a)	Data representation is the method used to encode information into a format that can be used and understood by computer systems. It involves the conversion of real-world data, such as text, images, sounds, numbers, into forms like binary or hexadecimal which computers can process. Now, convert the binary 10110111 into hexadecimal and then take that number into octal by following proper process.	[4]	CO2
	b)	An iterative design process is a project management and design approach to the development lifecycle that prioritizes flexibility, adaptability, and continuous improvement. Draw the flowchart of an iterative design process. Also give a truth table for XNOR gate for 3 bit input.	[4]	