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Daffodil International University

Faculty of Science & Information Technology

Mid Term Examination, Fall 2023

Course Code: CSE112: Course Title: Computer Fundamentals

Level:1 Term: 1 Batch: 65

Time: 1 Hr 30 Min **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)*	What are the fundamental components and their interconnections in the basic organization of a computer system, and how does this organization contribute to the system's concept?	[5]	CO1
	b)	Compare impact and non-impact printers.	[3]	
2.	*a)*	You have just installed a new operating system on your computer and want to learn more about its features and functionality. Describe the difference between system software and application software. Give particular examples of each category and explain their functions in controlling and improving the computer's capabilities.	[4]	*CO1*
	b)	How does fixed word-length memory addressing differ from variable word-length memory addressing, and what are the advantages and disadvantages of each approach in terms of memory utilization, and addressing flexibility within computer systems?	[3]	
3.	*a)*	Perform the following number conversion: i. $(132)_4 = (\ ?\ )_6$ ii. $(A7B)_{16} = (\ ?\ )_8$	[2]	CO2
	b)	i. Unlike humans, computers do not perform subtraction directly; instead, they utilize an additive method. Now demonstrate this by subtracting $(-41)_{10}$ from $(80)_{10}$ using the additive approach. ii. $(10101111)_2 \div (110)_2$ iii. $(11010111)_2 \times (1111)_2$	[2] [2]	
	c)	How will you represent -29.55×2^{-3} in using IEEE 754 binary 32 bit format?	[4]	