Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science and Engineering
Mid Semester Examination, Spring-2024
Course Code: CSE112 Course Title: Computer Fundamentals
Level: 1 Term: 1

Exam Duration: 1.5 Hours **Marks: 25**

Answer ALL the Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes.]

1.	a)	**Draw** the block diagram to illustrate the basic organization of a computer system and explain the functions of various units.	[2.5]	CO1
	b)	Which generation of computers introduces Graphical User Interfaces (**GUI**)? **How** did the (GUIs) contribute to the evolution of computer interfaces?	[2.5]	
2.	a)	In the realm of data storage, what comparative analysis can be made between magnetic tape and magnetic disk technologies in terms of their suitability for long-term archival storage, data retrieval speeds, scalability, and cost-effectiveness?	[2.5]	
	b)	Imagine that your PC has crashed. Which type of software you have to install to run your PC? **What** are the primary functions and characteristics of this software in modern computing environments, and how do they differ from other types of software?	[2.5]	
3.	a)	**Describe** the characteristics and applications of point-and-draw devices in computing. Provide examples of these devices and their functions.	[2.5]	
	b)	**Compare and contrast** the characteristics of a **RISC** processor and a **CISC** processor. Highlight situations where each architecture might be preferred.	[2.5]	
4.	a)	**Perform** the following number conversion: i. $(11100101.101)_2 = (?)_{10}$ ii. $(4E2CD)_{16} = (?)_8$	[2.5]	CO2
	b)	**Perform** the subtraction $(1101011)_2$ from $(11001101)_2$ using the additive/complementary approach.	[2.5]	
5.	a)	**Perform** the following operations: i. $(54765)_8 + (46753)_8 = (?)_8$ ii. $(4E28D)_{16} - (4E2C9)_{16} = (?)_{16}$	[2.5]	
	b)	**Represent** the decimal number 57.625 in binary 16-bit format, indicating the sign bit, exponent, and mantissa.	[2.5]	