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Daffodil International University

Faculty of Science & Information Technology
Department of Computing and Information System
Final Examination, Spring-2026
Course Code: C0F101, Course Title: Computer Fundamentals
Level: 1 Term: 1

Exam Duration: 2 Hours **Marks: 40**

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)	Differentiate between system software and application software with suitable examples.	[2]	CO1
	(b)	Explain how input and output devices work together in a computer system.	[3]	
	(c)	Convert the following numbers according to the specified number system. (i) Convert $(58)_{10}$ to binary and hexadecimal. (ii) Convert $(110101)_2$ to decimal.	[3+ 2]	
2.	(a)	Explain the key features of RISC and CISC architectures.	[4]	CO2
	(b)	Given the Boolean expression: F = (A + B)(A' + C) (i) Simplify the expression using Boolean algebra. (ii) Draw the logic circuit diagram for the simplified expression.	[6]	
3.	(a)	What is an algorithm? What is the purpose of an algorithm?	[2]	CO3
	(b)	Design an algorithm and apply the algorithm for illustrating a flowchart containing: • Input a student's mark for a course • Check whether the student has passed (pass mark = 40) • Display "Pass" or "Fail"	[2+ 4]	
	(c)	List a few high-level programming languages. Explain why C is considered a foundational high-level programming language?	[2]	

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4.	(a)	Explain how an operating system manages *multiple* applications simultaneously.	[2]	CO4
	(b)	Daffodil International University (*DIU*) has several offices, and academic units in Daffodil Smart City. To ensure communication and resource sharing among them, analyze whether LAN or WAN would be the most appropriate network type. Justify your answer with reasons.	[2]	
	(c)	A system becomes slow after installing unknown software. Analyze the possible type of attack, explain its effects, and finally suggest a few preventive measures.	[6]	