



Daffodil International University
Faculty of Science & Information Technology
Department of Computer Science & Engineering
 Midterm Examination, Spring 2025
 Course Code: CSE112, Course Title: Computer Fundamentals
 Level: 01 Term: 01 Batch: 68

Time: 01:30 Hrs.

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)	Explain how the different phases of the computer data processing cycle—input, processing, output, and storage—are used in a modern e-commerce system. Provide examples of how data flows through these phases in an online shopping platform.	5	CO1
2.	a)	Compare the <u>hardware</u> and <u>software</u> advancements in 5 th -generation computers with those of the 4 th -generation. How have these improvements facilitated the development of <u>artificial intelligence</u> ?	4	CO1
	b)	Summarize the <u>functioning</u> of the <u>control unit</u> and <u>ALU</u> in a processor. How do these <u>components work together to execute an instruction cycle</u> ?	3	
	c)	Explain why <u>multi-core processors</u> improve performance over <u>single-core processors</u> . <i>cache, core, thread</i>	3	
3.	a)	Perform the following conversions. Show the step-by-step process and provide the final result. ✓ i. $(85.375)_{10} = (?)_2$ $(10101.011)_2$ ✓ ii. $(132)_4 = (?)_6$ $(50)_6$	4	CO2
	b)	Perform the following binary operations and show all steps: ✓ i. $1000010 - 0101011 = ?$ $00101011_2 = (42)_{10}$ $30 - 15 = 15$ $(4 + 8 + 16) = 28$ $(1 + 4 + 8 + 32) = 55$ ✓ ii. Divide the binary number 11010101 by 101 using long division. Show the steps and provide the quotient and remainder. 101010.10	3	
	c)	Apply the complementary method to <u>subtract</u> $(011100)_2$ <u>from</u> $(0101101)_2$. Show the steps involved in the process and explain how you handle the negative result.	3	

5 min

$128 + 64 + 16 + 4 + 1 = 213$

$101 = 5$

$11010101 = 213$

$1010 \cdot 101010.10$

2421

$10101011 = 230$

$= 87$