



Daffodil International University

Department of Software Engineering

Faculty of Science & Information Technology

Final Examination, Spring 2024

Course Code: SE222

Course Title: Computer Architecture

Sections & Teachers: FBR, KBB, NJM, SS, SUP

Time: 2:00 Hrs

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)	Interpret the performance parameters of memory and show the measurement of memory performance.	[Marks-5]	CLO-2 Level 2
	b)	Explain the structure of a cache memory system with a proper diagram.	[Marks-5]	
2.	a)	Demonstrate the advantages and disadvantages of direct mapping and associative mapping with diagrams.	[Marks-5]	CLO-3 Level 3
	b)	Illustrate Set Associative mapping from main memory to cache with diagram.	[Marks-5]	
	c)	Apply the Booth's algorithm for 2's complement multiplication for the following values: Multiplier: -5 Multiplicand: -7	[Marks-5]	
	d)	Illustrate the block diagram of hardware for addition and subtraction.	[Marks-5]	
3.	a)	Integrate with two address representation verifying the following expressions: $X = (A + B \times C) / (D - E \times F)$	[Marks-5]	CLO-4 Level 3
	b)	Construct the following floating point binary numbers into decimal. Assume 14 bits for the mantissa and 8 bits for the exponent, both in two's complement. <u>0.011011100101000000011</u>	[Marks-5]	