



Daffodil International University
Department of Software Engineering
Faculty of Science & Information Technology
Midterm Examination, Spring 2024

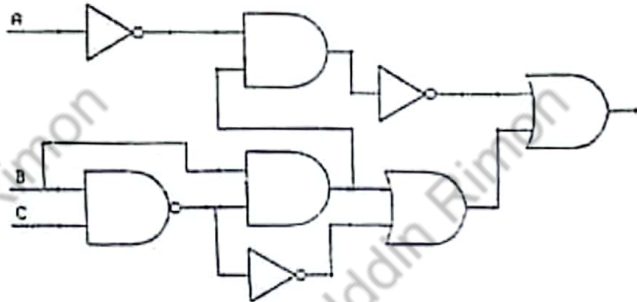
Course Code: SE 213; Course Title: Digital Electronics & Logic design
Batch: 41 Batches (All); NIR, SP, MMI, MBM, MT, HI, MSP

Time: 1:30 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)	Check the following circuit diagram. Express the output logic equation. 	[Marks-4]	CLO-1 Level-2
	b)	Utilize 2's complement method to Subtract the binary numbers $1100000 - 1010001$	[Marks-3]	
	c)	Estimate the solution of the following problem $(7AF3.39B)_{16} = (?)_8$	[Marks-3]	
2	a)	Prove the De Morgan's Law with explanation.	[Marks-5]	CLO-2 Level-3
	b)	$F(A,B,C,D) = \sum(0,2,6,7,8,10,14,15)$ Apply k-map simplification technique to simplify the above expressions. Construct the logic diagrams of the simplified output.	[Marks-5]	
	c)	i) Express the following function Below: sum of product form. $F(X,Y,Z) = (XY + Z)(Y+XZ)$ ii) Express the following function in Product of sum form. $F(X,Y,Z) = XY + XZ'$	[Marks-5]	