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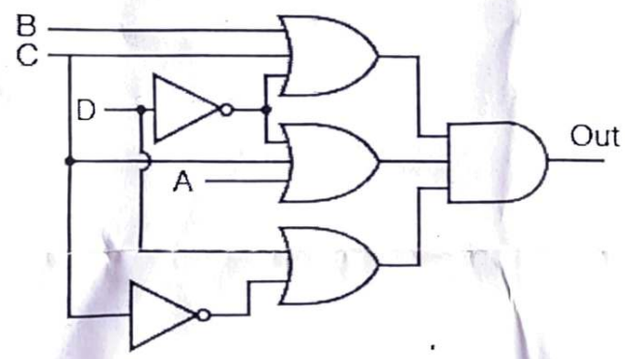
Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Spring 2026
Course Code: CSE223, Course Title: Digital Logic Design
Level: 2 Term: 2 Batch: 67

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)	Show the conversion of following number system: (i) Convert Decimal 3645.325 to base 8 to base 6.	4	CO1
	b)	 Identify the Boolean Expression of 'Out' from the following circuit diagram.	4	
	c)	Develop a standard form the Boolean function F = (A'+B)(A+D')C using Sum of Minterm.	4	
2	a)	Simplify the following function using K-map with don't care condition: F(A,B,C,D) = Σ(0, 1, 5, 7, 9, 13,15) +d Σ (2, 3, 10,12)	5	CO2
3.	a)	Construct a full adder circuit with 2 half adder and required gate.	3	CO3
	b)	You have been tasked with creating a Safety Gadget. You want to establish a CCTV camera and temperature detection system in the system. Configure a motion detection device to identify any unlawful actions. You now aim to control all outputs using a circuit. If movement is detected in your residence and the CCTV camera verifies it, you will get a "Call". If the temperature is high, you will get an SMS on your mobile phone. Construct a truth table, Boolean expression, and circuit schematic for this system.	5	