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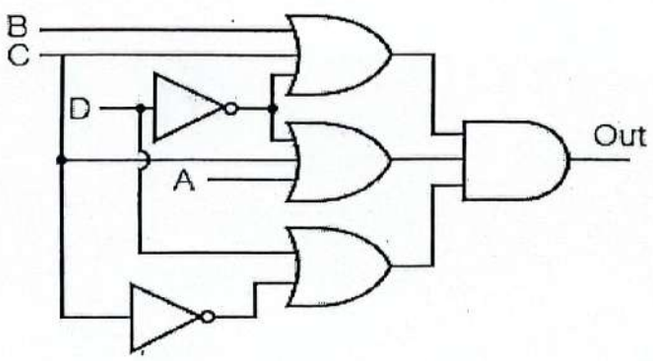
# Daffodil International University

**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:<br>(i) Convert Decimal 3645.325 to base 8 to base 6. | 4 | CO1 |
| | *b)* | <br>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:<br>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.<br>Construct a truth table, Boolean expression, and circuit schematic for this system. | 5 | |

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