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MKH

Daffodil International University

Department of Software Engineering

Class Test-2, ~~Fall-2025~~ (47-C/E) Sp-26

Course Title: Computer Fundamentals

Course Code: SE-111

Time: 45 Minutes **Total Marks: 15**

Instructions:

i) Answer all the questions.

ii) Marks allotted are indicated in the right margin.

iii) Symbols and abbreviations bear their standard meaning.

1. In a laboratory, a **chemical reaction chamber** has two safety conditions: 06

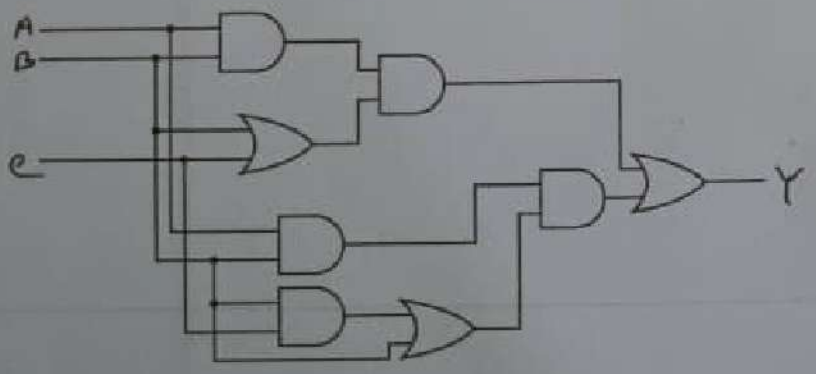
   - **Sensor A** detects high temperature.
   - **Sensor B** detects high pressure.

   The **alarm system** should turn OFF only when **both temperature and pressure are high at the same time**.

   In all other situations, the alarm should remain ON.

   i. Which logic gate represents this system?
   ii. Construct the truth table.
   iii. Write the Boolean expression for the system.

2. **Identify** the final output for the below logic circuit diagram also simplify the output result and prove your simplification using truth table. 06



3. **Draw** a logic circuit for the following Boolean expression. 03

   $F = AB'(AC+BC)'+A'C+A'B'(BC')+AC+B'C$