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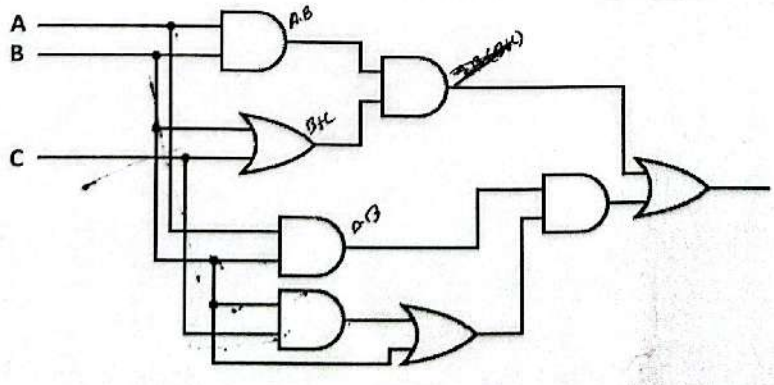
# Daffodil International University

**Department of Software Engineering**
**Faculty of Science & Information Technology**
**Midterm Examination, Spring 2025**
**Course Code: SE 111; Course Title: Computer Fundamentals**
**Sections & Teachers: NJM(A,B), MRD(C,D), SI(E,I,J), MKS(F), TAK(G,H), KR(K,M), KF(L)**

**Time: 1 Hour 30 Mins** **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)* | TechNova a small company recently installed operating system for their office computers. One of the characteristics of that operating system is, it is UNIX operating system with C programming. UNIX is a multi-user and multitasking operating system designed for efficiency and flexibility. The main reason to install this type of operating system is, it supports multiple users at once and provides a command-line interface<br><br>**Explain** the generation of computer mentioned in the above scenario with its other software technologies. | [Marks-3] | CLO-1 *C2* |
| | *b)* | A computer runs a program instantly accessing data from a type of storage for quick processing. Later, it saves files sequentially for long-term use in another type of storage. When needed again the system searches in order to retrieve the stored data. This ensures fast execution for active tasks while keeping information accessible for future use.<br><br>**Compare** the above-mentioned memories with example. | [Marks-3] | |
| | *c)* | i) **Convert** $456_9$ to its Base 4 equivalent Number.<br>ii) **Convert** $1111110.1001_2$ to its Base 10 equivalent Number.<br>iii) **Convert** $D16_{16}$ to its Base 8 equivalent Number. | [Marks-9] | |
| 2. | *a)* | **Illustrate** a logic circuit for the following Boolean expression.<br>**F= AB′(AC+BC)′+A′C+A′B′(BC′)+AC+B′C** | [Marks-3] | CLO-2 *C4* |
| | *b)* | **Identify** the final output for the below logic circuit diagram also simplify the output result and prove your simplification using truth table.<br> | [Marks-7] | |