# Daffodil International University

## Faculty of Science & Information Technology

## Department of Computer Engineering

**Course Code: CSE 331 ; Course Title: Compiler Design**

**Time:** 1hour | **22/11/2025** | **Marks: 15**

| Sl. | Question | Marks |
|---|---|---|
| 1. | S → Expr<br>Expr → Expr + Expr<br>\| Expr - Expr<br>\| Term<br>Term → Term * Term<br>\| Factor<br>Factor → ( Expr )<br>\| id | |
| | a) "id - id - id", Show LMD and RMD of the string through the production rules | **03** |
| | b) Is this string ambiguous for this grammar? show how and identify the production rule creating this ambiguity. | **04** |
| 2. | S → S 0 \| A 1 \| B 2<br>A → A 3 \| S 4 \| B 5<br>B → B 6 \| S 7 \| A 0 | |
| | a) Does this grammar have left recursion cycles? If so identify the types of left recursion it contains, and produce the new rules, solving that issue. | **04** |
| 3. | S -> abcdeX \| abcdeY \| abcfZ \| abg \| ah \| k | |
| | a) Complete all the left factoring of the above production rule | **04** |