Bangladesh University

Department of Computer Science and Engineering

Final Term Examination, Spring Semester 2026

Course code: CSE- 3201

Course Title: Compiler Design

Batch: 69th (Evening)

Time: 2 hours | Total Marks: 8 * 5 = 40

Instructions:

1. *Read the questions carefully and answer accordingly.*
2. *If you have a problem understanding any question, please ask your teacher, not your classmate.*

Answer any five (5) from the following questions

1. Construct the LL (1) parsing table for the following grammar. 8

   S→ AB

   A→ 0A' | 1A'| ε

   A'→ SSA'| ε

   B → AS | 1

2. a. Do left factoring in the following grammar: 4

   A → aAB | aA | a

   B → bB | b

   b. Eliminate Left recursion in the following grammar: 4

   S → A

   X → XYb | Ya | b

   Y → Yb | XYba | Yaa | ba | a

   A → Ad | Ae | aB | ac

   B → bBc | f

3. Find the FIRST and FOLLOW of all the non-terminals in the following grammar. 4+4=8

$S \rightarrow aAbCD \mid \varepsilon$

$A \rightarrow SD \mid \varepsilon$

$C \rightarrow Sa$

$D \rightarrow aBD \mid \varepsilon$

4. Construction of the syntax tree and DAG for the following expression: 4+4=8

(a*b) + (a*b) * (c-d) + b

5. Write three address codes, quadruples and triples for the expression: 3+2+3=8

-(a*b) + (c+d) - (a+b+c+d)

6. Consider the ambiguous grammar. 8

$E \rightarrow TE'$

$E' \rightarrow +TE' \mid \varepsilon$

$T \rightarrow FT'$

$T \rightarrow *FT' \mid \varepsilon$

$F \rightarrow (E) \mid id$

Construct a Predictive Parsing table for the grammar & also check whether string id * (id + id) *id is accepted or not.