NOAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

Year-03 Term-01 Lab Final Examination 2025

Department of Computer Science and Telecommunication Engineering

Course Title: Compiler Construction Lab (CSTE-3110)

Group-A (SET-B)

1. Write a C program that accept strings containing "bca" as a substring on the alphabet {a, b, c} (using transition diagram only, no other short-cuts acceptable). (15)

   Sample Input/Output:

   Enter a string: abca
   Accepted
   Enter a string: bcbaca
   Rejected

   Implement recursive descent parser

   ~~recursive descent parser~~

2. Write a C program to ~~compute First and Follow~~ for the following grammar. (15)

   T → A − T | A

   A → num * A | num

   Sample Input Output:
   Enter a string: 3 * 4 − 2
   Accepted
   Enter a string: 3 4 *
   Rejected

3. Write a Lex program to recognize a valid ~~[illegible]~~ floating-point numbers with exponentiation. (10)

   Enter a number: 12
   Not a floating-point number
   Enter a number: 12.23
   It's a floating-point number
   Enter a number: 12.23E2
   It's a floating-point number with exponentiation.

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Course Title: Compiler Construction Lab (CSTE-3110)
Group-B (SET-B)

1. **Write a C program that accept strings containing "cba" as a substring on the alphabet {a, b, c} (using transition diagram only, no other short-cuts acceptable). (15)**

Sample Input/Output:

Enter a string: abcba
Accepted
Enter a string: bcbcab
Rejected

2. **Write a C program to eliminate left recursion from the following grammar: (15)**

$A \rightarrow AaB \mid Aa \mid a$
$B \rightarrow Ba \mid b \mid c$

. **Write a Lex program to recognize words beginning and ending with a. (10)**

Sample Input	Sample Output
Enter an identifier: ana	Matching
Enter an identifier: and	Not Matching