Rajiv Gandhi Institute of Petroleum Technology, Jais Amethi

Department of Computer Science and Engineering

Compiler Design Lab (CS312L)

Assignment 6

Q.1 Write a C++ program to compute the **FIRST set** of a given context-free grammar.

Input:
Number of productions: 4
E=TR
R=+TR
R=#
T=i

Expected Output:
FIRST(E) = { i }
FIRST(R) = { +, # }
FIRST(T) = { i }

Q.2 Write a C++ program to compute the **FOLLOW set** for all non-terminals of a given grammar.

Input:
Number of productions: 3
S=AB
A=aA
A=#
B=b

Expected Output:
FOLLOW(S) = { $ }
FOLLOW(A) = { b }
FOLLOW(B) = { $ }

Q.3 In Write a C++ program to eliminate **immediate left recursion** from a grammar.

Input:
E=E+T/T

Expected Output:
E = T E'
E' = +T E' | **ε**

Q.4 Write a C++ program to perform **left factoring** on a grammar.

Input:
A=abC
A=abD
A=aE

Expected Output:
A = aA'
A' = bC | bD | E