Cluster Innovation Centre, University of Delhi, Delhi-110007

Examination   : **End Semester Examination – Nov/Dec 2021**

Name of the Course : **B.Tech (Information Technology and Mathematical Innovations)**

Name of the Paper   : **Computer Language, design and Engineering**

Paper Code : **911711**

Semester   : **VII**

Duration   : **3 Hours**

Maximum Marks   : **75**

Instructions:

This question paper contains six questions, out of which any four are to be attempted. Each question carries equal marks.

_____

Q1**.** Define all the phases of Compiler with detailed explanation of each one of them using Input x = a + b * c

> If CFG is defined as:

>> S -> id = E;

>> E -> E + T | T

>> T -> T * F | F

>> F -> id

Q2. What is the difference between Lexical Analyser and Syntax Analyser in Compiler, explain usage of each of them with example.

Q3. What are the necessary steps which we need to keep in mind prior to writing any Parser in Compiler ? Please explain each of them in detail.

Q4. Provide the difference with the help of examples

- Ambiguous Grammar/ Non Ambiguous Grammar

- Left Most Derivation / Right Most Derivation

- Deterministic / Non Deterministic Grammer

Q5. Please provide the first and follow table for Grammar given below:

E -> TE`

E` -> +TE` | ε

T -> FT`

T` -> *FT`| ε

F -> id | (E)

Q6. Please check if grammar given below are Ambiguous or Not with derivation tree.

a) S -> aSbS | bSaS | ε, input: abab

b) R -> R+R | R*R | R* | a | b | c, Input: a+b+c