UNIVERSITY OF ENGINEERING AND MANAGEMENT, KOLKATA

Degree: B. Tech Stream: CSE

Year:3rd

Even Semester Term - I Examination, February - 2024

Subject Code: PCCCSE601

Subject Name: Compiler Design

Full Marks: 30 Duration: 1 Hour

Date:27.02.2024 Time: 2.30 PM – 3.30 PM

Part - A

Attempt 5 questions

Each question carries 2 marks (2×5)

1. Define compiler.

   or

   Define pre-processor. What are the functions of pre-processor?

2. Differentiate between compiler and interpreter.

   or

   Differentiate between NFA and DFA.

3. Define the following terms: a) Lexeme b) Token.

   or

   Define augmented grammar.

4. What are the problems associated with Top Down Parsing?

   or

   What is translator? Write down the steps to execute a program.

5. What is the purpose of a syntax analyser?

   or

   What is a Loader? What does the loading process do?

Part - B

Attempt 2 questions

Each question carries 5 marks (5×2)

6. Draw the Deterministic Finite Automata for the language Even no. of 0's and 1's.

   Or

   What is LEX? Discuss the usage of LEX in Lexical Analyzer generation.

7. Define left recursion. Is the following grammar left recursive? $E \rightarrow E+E \mid E*E \mid a \mid b$.

   Or

   Construct the left-most and right-most derivations for the following grammar:-

S->aB | bA
A->aS | bAA | a
B-> bS | aBB | b which accepts the string "aaabbabbba"

Part - C

Attempt 1 question

Each question carries 10 marks (10 × 1)

8. Define an LL(1) grammar. Is the following grammar LL(1). G: S → iEtS | iEtSes |a , E → b.
Also write the rules for computing FIRST () and FOLLOW ().

Or

Define a Parser. What is the role of grammars in Parser construction? Construct the Predictive parsing table for the grammar G : E → E+T |T , E →T*F |F , F →(E) |id.

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