BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - V Computer Science & Business System : WINTER : 2023

SUBJECT : COMPILER DESIGN

Day : Monday

Time : 02:30 PM-05:30 PM

Date : 04-12-2023

W-24167-2023

Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Classify the Tokens. Differentiate between lexemes, tokens and patterns with suitable example. **(10)**

OR

Q.1 Design NFA and DFA for language of a's and b's contains ending with 'abb'. **(10)**

Q.2 Check whether given grammar is LL(1) or NOT **(10)**

$S \rightarrow iEtS \mid iEtSaS \mid a$

$E \rightarrow b$

OR

Q.2 Compute FIRST and FOLLOW for following Grammar. **(10)**

$E \rightarrow TQ$

$T \rightarrow FR$

$Q \rightarrow +TQ \mid -TQ \mid E$

$R \rightarrow *FR \mid /FR \mid E$

$F \rightarrow (E) \mid id$

Q.3 Find the SLR parsing table for the given grammar **(10)**

$E \rightarrow E+E \mid E*E \mid (E) \mid id$

And parse the sentence $(a+b)*c$.

OR

Q.3 Construct an LALR parsing table for the following grammar. **(10)**

$E \rightarrow E+T \mid T$

$T \rightarrow T*F \mid F$

$F \rightarrow id$

Q.4 Define symbol table. Explain the different organization of symbol table. **(10)**

OR

Q.4 Explain in detail evaluation and flow of attribute in syntax tree. **(10)**

Q.5 Discuss the intermediate code. Explain different types of intermediate code forms. **(10)**

OR

Q.5 Classify the principle sources of optimization. Give the classification of code optimization. **(10)**

Q.6 Write a note on register allocation and loop optimization. **(10)**

OR

Q.6 Classify the code optimization? Explain about various levels and types of optimization. **(10)**

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