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VI-SEMESTER

MID SEMESTER EXAMINATION

CO302 Compiler Design

Roll No.....

B.Tech.(CO)

March- 2024

Time: 1:30 Hours

Max. Marks: 20

Note: Attempt all questions

Q.No. 1

[4] CO1

- Explain Handle and Handle pruning with suitable example.
- Remove left recursion from following grammar if any  
 $S \rightarrow Aa \mid b$        $S \rightarrow Ac \mid Sd \mid e$
- Compute FOLLOW of C in the following grammar  
 $S \rightarrow ABC$        $A \rightarrow aCAb/\epsilon$        $B \rightarrow bBc/\epsilon$        $C \rightarrow abc$
- Describe various phases of compiler design with example

Q.No. 2

What is cross compiler? Explain and test whether the following grammar is LL(1) or not?

[4] CO2

$S \rightarrow aBC \mid \epsilon$

$B \rightarrow aBD \mid bD$

$C \rightarrow bS$

$D \rightarrow a$

(where 'S' is start symbol)

Q.No. 3

Compute FIRST and FOLLOW and construct predictive parsing table for the following grammar:

[4] CO2

$S \rightarrow aYXh$

$Y \rightarrow Yb \mid c$

$X \rightarrow EF$

$E \rightarrow g \mid \epsilon$

$F \rightarrow f \mid \epsilon$

(where 'S' is start symbol)

Q.No. 4

Compute canonical collection of sets of LR(1) items and Construct canonical LR (CLR) parsing table for following grammar.

[4] CO4

$S \rightarrow Da \mid bDc \mid dc \mid bda$

$D \rightarrow d$  , (where 'S' is start symbol)

Q.No. 5

Consider the grammar  $\{ S \rightarrow BS \mid 0, B \rightarrow SB \mid 1 \}$ . Construct the SLR parse table for the grammar. Show the actions of the parser for the input string "1010". {S is start symbol}

[4] CO4