United College of Engineering and Research ,Naini,Prayagraj

Computer Science and Engineering Department

Compiler Design(RCS-602)

Unit 2(Parsing techniques)

Asked in AKTU Lucknow(2014-18)

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[2018-19]

1. What is the mean by viable prefixes?
2. What are the problems with top down parsing? Write the algorithms for first and follow?
3. Perform Shift reduce parsing for the given input strings using the grammar

   $S \rightarrow (L) \mid a$

   $L \rightarrow L , S \mid S$

   I. (a,(a,a))

   II. (a,a)
4. Construct LR(0) parsing table for the following grammar

   $S \rightarrow c\ B \mid c\ c\ A$

   $A \rightarrow c\ A \mid a$

   $B \rightarrow c\ c\ B \mid b$
5. Eliminate the left recursion from the following grammar

   $S \rightarrow AB$

   $A \rightarrow BS \mid b$

   $B \rightarrow SA \mid a$

[2017-18]

6. Explain non recursive predictive parsing. Consider the following grammar and construct the predictive parsing table

   $E \rightarrow TE'$

   $E' \rightarrow +TE' \mid \epsilon$

   $T \rightarrow FT'$

   $T' \rightarrow *FT' \mid \epsilon$

   $F \rightarrow * F \mid a \mid b$

7. Give operator-precedence parsing algorithm. Consider the following grammar and build up operator precedence table. Also parse the input string

   (id+(id*id))

   E→E+T | T

   T→T*F | F

   F → (E) | id

8. For the grammar

   S→aAd | bBd | aBe | bAe

   A→f

   B→f

   Construct LR(1) Parsing table . Also draw the LALR table from the derived LR(1) parsing table.

9. Consider the following grammar

   E→E+E

   E→E*E

   E→(E) | id

   Construct SLR parsing table and suggest your final parsing table.

[2016-17]

10. State the problem associated with top down parsing?
11. What is the role of left recursion.
12. Construct an SLR(1) parsing table for the following grammar

    S→ A)

    A→ A , P) (P , P

    P→{num,num}

13. Consider the following operator precedence matrix draw precedence graph and compute the precedence function

	a	(	)	;	$
a			>	>	>
(	<	<	=	<	
)			>	>	>
;	<	<	>	>	
$	<	<			

[2015-16]

14. Show that the following grammar

S→Aa | bAc | Bc | bBa

A→d

B→d

is LR(1) but not LALR(1)

15. Construct LALR parsing table for the following grammar.

S→AA

A→aA

A→b

[2014-15]

16. Check whether left recursion exists for the following grammar

S→Aa | b

A→Ac | Sd | ϵ

17. ConstructCLR parsing table for the following grammar.

S→AA

A→aA

A→b