29-07-23 Analytical - 6 s.no = 33

R. praveen ganesh.

(i) Consider grammar Eliminate left recursiy

$A \to ABd \mid Aa \mid a$

$B \to Be \mid b$

(A)

$A \to aA'$

$A' \to BA' \mid \varepsilon$

$B \to bB'$

$B' \to eB' \mid \varepsilon$

$A \to aA'$

$A' \to BA' \mid \varepsilon$

$B \to bB'$

$B' \to eB' \mid \varepsilon$

(ii) Eliminate left recursion.

$A \to AAa \mid \beta$

(A) $A \to \beta A'$

$A' \to AAaA' \mid \varepsilon$.

(iii) Do left factoring.

a. $S \to bSSaaS \mid bSSaSb \mid bSb \mid a$

(A) $S \to bSS' \mid a$

$S' \to SaaS \mid Sb \mid \varepsilon$

b. $S \to aSSbS \mid aSaSb \mid abb \mid b$

(A) i. as have common prefix a.

2. production aSbS and abb

Common prefix 'ab'.

S: No = 33

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$S \rightarrow ass' / abb / b$

$s' \rightarrow sbs / sbs / \varepsilon$

(iv) Check whether grammar is LL(1) or not.

$S \rightarrow iEts / iEtses / a$

$S \rightarrow b$

(A) $S \rightarrow iEts / iEtses / a$

$E \rightarrow b$

for non-terminals S:

→ The productions $S \rightarrow iEts$ and $S \rightarrow iEtses$ both begin with terminal 'i'. violation.

grammar is NOT LL(1) for S.

for non-terminal E:

→ The production $E \rightarrow b$ doesn't have any other conflicting producting ster

Alot LL(1) grammar