

解:

1) 消去左递归

a) 排序

$T(1)$ 、 $S(2)$

b) 代入

$T \rightarrow ST'$

$S \rightarrow a \mid \wedge \mid (T)$

c) 消去直接左递归

$G'(S): S \rightarrow a \mid \wedge \mid (T)$

$T \rightarrow ST'$

$T' \rightarrow ,ST' \mid \varepsilon$

d) 化简

无需再化简

2) 写出不带回溯的递归子程序

$P(S)$

IF $ch = "a"$ THEN read(ch);

ELSE IF $ch = "\wedge"$ THEN read(ch);

ELSE IF $ch = "("$ THEN

BEGIN

Read(ch);

$P(T)$;

IF $ch = ")"$ THEN read(ch);

ELSE ERROR

END

ELSE ERROR;

$P(T)$

BEGIN

$P(S)$;

$P(T')$;

END;

$P(T')$

IF $ch = ","$ THEN

BEGIN

Read(ch);

$P(S)$;

$P(T')$;

END;

ELSE IF $ch = ")"$ THEN

Return;

ELSE ERROR;

3) 是否为 LL(1)

无递归且首符集元素不相交, 为 LL(1)

4) 预测分析表

$\text{FIRST}(a) = \{a\}$

$\text{FIRST}(\wedge) = \{\wedge\}$

$\text{FIRST}((T)) = \{\}$

$\text{FIRST}(ST') = \text{FIRST}(S) = \{a, \wedge, \{\}$

$\text{FIRST}(,ST') = \{\}$

$\text{FOLLOW}(T') = \text{FOLLOW}(T) = \{ \} \}$

	a	\wedge	()	,	#
S	$S \rightarrow a$	$S \rightarrow \wedge$	$S \rightarrow (T)$			
T	$T \rightarrow ST'$	$T \rightarrow ST'$	$T \rightarrow ST'$			
T'				$T' \rightarrow \varepsilon$	$T' \rightarrow ,ST$	