0150

Consider the following grammar G:

$$S' \rightarrow S$$
  
 $S \rightarrow 0 S 1$   
 $S \rightarrow 1 S 0$   
 $S \rightarrow c$ 

where S is a nonterminal and a, b, and c are terminals.

(a)[5] What is the language L(G)

(b)[10] Construct the collection of the sets of LR(0) items

(c)[10] Construct the SLR parsing table of G. Please specify clearly how every shift or reduce action is determined

2. Consider the following grammar G:  $S \rightarrow abS \mid acS \mid c$ 

where S is a nonterminals and a, b, and c are terminals.

(a) [5] Is G LL(1)? Explain why it is not WITHOUT giving a parsing table.

(b)[10] Modify the grammar G to G' to make G' LL(1)

(c)[10] Build LL(1) parsing table.

Consider the following grammar G:

der the following grammar G:  

$$S' \rightarrow S$$
  
 $S \rightarrow Aa \mid bAc \mid dc \mid bda$   
 $A \rightarrow d$   
 $S \rightarrow Aa \mid bAc \mid dc \mid bda$ 

where S and A are nonterminals and a, b, c, and d are terminals.

(a) [10] Is G LR(1)? If yes, give the parsing table. Otherwise, explain why.

(b) [10] Is G LALR(1)? If yes, give the parsing table. Otherwise, explain why.

Consider the following grammar G:

$$S' \rightarrow S$$
  
 $S \rightarrow iEtS \mid iEtSeS \mid a$   
 $E \rightarrow b$ 

where S and E are nonterminals and i, t, e, a, and b are terminals

(a) [5] Please identify the conflicts in G

(b) [5] Build the parse tree of the word iEtiEtSeS if shift action is chosen

(c) [5] Build the parse tree of the word iEtiEtSeS if reduce action is chosen

[10] Consider the grammar G

$$S' \to S$$

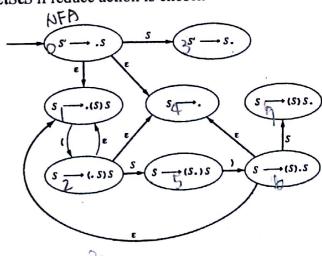
$$S \to (S) S \mid \epsilon$$

An NFA N can be formed if each LR(0) item is treated as a state:

There is a transition from  $A \rightarrow \alpha \cdot X \beta$ to  $A \rightarrow \alpha X \cdot \beta$  label X, and

There is a transition from  $A \rightarrow \alpha \cdot B \beta$ to B  $\rightarrow \gamma$  labeled  $\epsilon$ 

Please find an equivalent DFA D



2015年6月16日