

1. (a) Calculate First and Follow for the following grammar:

$$S \rightarrow \mathbf{u} B D \mathbf{z}$$

$$B \rightarrow B \mathbf{v}$$

$$B \rightarrow \mathbf{w}$$

$$D \rightarrow E F$$

$$E \rightarrow \mathbf{y}$$

$$E \rightarrow \epsilon$$

$$F \rightarrow \mathbf{x}$$

$$F \rightarrow \epsilon$$

- (b) Construct the LL(1) parsing table for the above grammar.  
(c) Is the grammar LL(1)?
2. (a) Build the LR(0) DFA (*i.e.*, states and goto edges) for the following grammar:

$$S' \rightarrow E$$

$$E \rightarrow \mathbf{id}$$

$$E \rightarrow \mathbf{id} ( E )$$

$$E \rightarrow E \mathbf{+id}$$

- (b) Is this grammar LR(0)?  
(c) Is this grammar SLR?