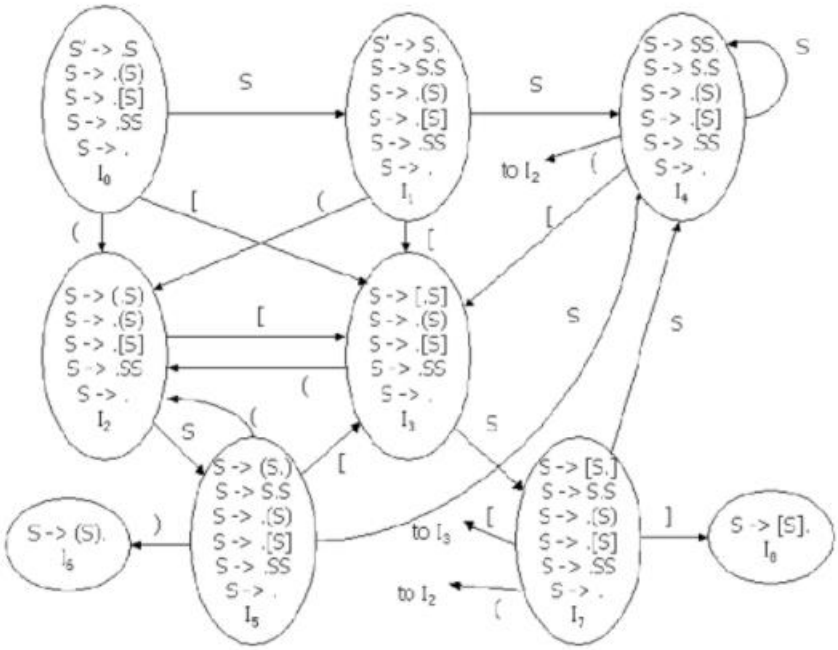
Q1) (for odd numbers) Consider the following DFA for recognizing the viable prefixes for the grammar :

S --> (S) | [S] | SS | Ɛ



a) Is the above grammar an SLR grammar? Why or why not?

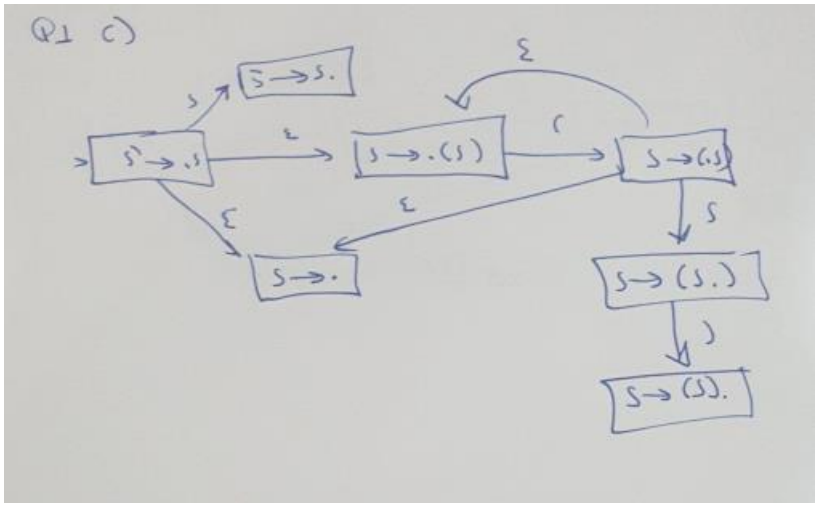
Answer

No, it is not; because there is a shift reduce conflict in state I1 and] is the the follow set of S

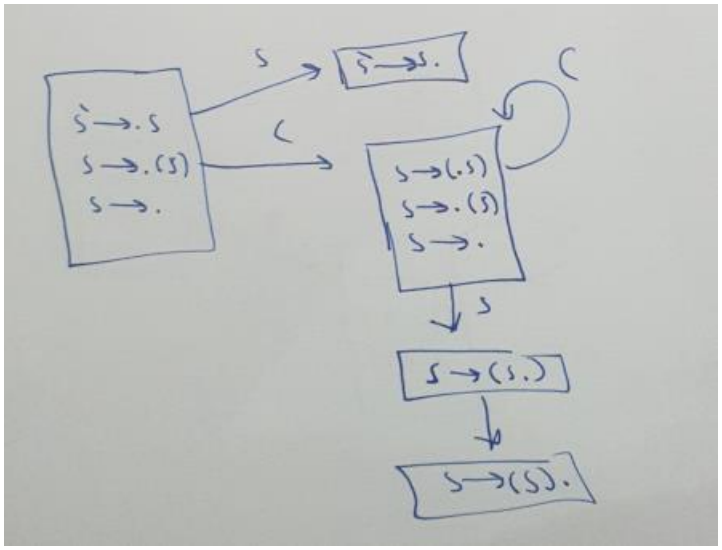
b) Could you by just looking at the grammar (without drawing the DFA) tell if the above grammar is an SLR grammar or not? Why?

Yes, because the grammar is ambiguous, it is obvious that it is not an SLR grammar

c) Design an NFA for recognizing the viable prefixes of the grammar S --> (S) | Ɛ

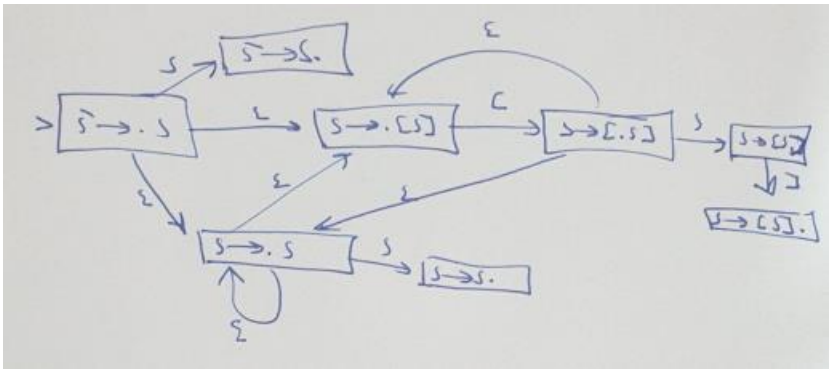


d) Convert the above NFA into a DFA



Q2) (for even numbers)

a) Same as in Q1
b) Same as in Q1
c) Design an NFA for recognizing the viable prefixes of the following grammar
S --> [S] | S



Q2 d) Convert the above NFA into a DFA