Challenge Activity 9 – Context-Free Grammars (CFGs) and Pushdown Automata (PDAs)

1. In the context of the conversion technique from a CFG to a PDA, which results in a single-state PDA accepting by empty stack, comment the following statements explaining if they are true or not and in which circumstances they are true/false (use examples whenever you think adequate to help your comments):

   (a) "If the CFG is ambiguous the resultant PDA obtained by the conversion is always non-deterministic."

   (b) "Even when the CFG can be implemented by a deterministic PDA, the conversion results always in a non-deterministic PDA."