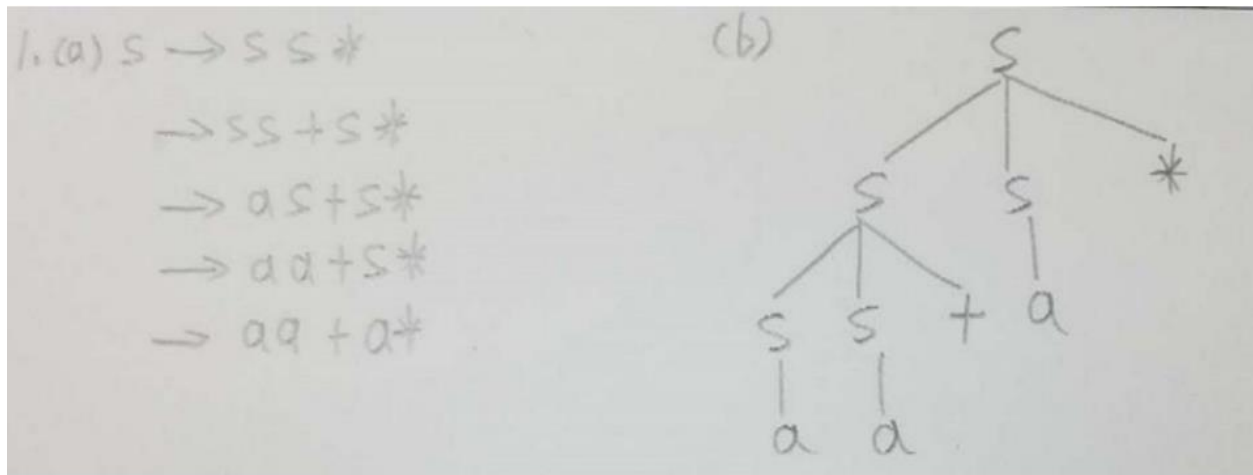1. Consider the following context-free grammar. (2pt)

    S -> S S + | S S * | a

    a) Show how the string aa+a* can be generated by this grammar. (1pt)

    b) Construct a parse tree for this string. (1pt)

2. Draw the DFA for the following languages of the alphabet {0,1}? (3pt)

    a) The language composed of all binary numbers that contain three inconsecutive 0's. (1pt)

    b) The language composed of all binary numbers that end with 00. (2pt)