1. Convert the following CFG to CNF

S → ABa | AC

A → Ab | a

B → b | C | λ

C → aa

2. Consider the CNF grammar G = (V,T,S,P) where

V = {S, A, B, C, D }, T = { a, b, c }, S = S and P is given below.

S 🡪AB | AC

A 🡪 AA | AB | a

B 🡪 BB | BC | b

C 🡪 CC | b | c

Use the CKY to determine if the string w = aabbc are in the language L(G). If the string is in L(G) construct the parse tree.

3. Construct an NPDA for the language L = { anbncm| : n ≥ 0, m ≥ 1 }. Include a screenshot of the transition graph below and submit the JFLAP file.