CS 302
QUIZ 5

19 April 2023

ANSWERS

(a)*(3 pts) See the relevant slide.*

(b)*(7 pts) The following CFG* $G = (\{S\},\{0,1\},R,S)$ *generates* L *where* R *is given by:*

$S \rightarrow S1 \mid 0S1 \mid 00S1 \mid e$

Hence the PDA $P = (\{q_0,q\},\{0,1\},\{S,0,1,Z_0\},\delta, q_0, Z_0)$

$(q_0,e,Z_0) \rightarrow (q,SZ_0)$; $(q,e,S) \rightarrow (q,S1)$; $(q,e,S) \rightarrow (q,0S1)$; $(q,e,S) \rightarrow (q,00S1)$

$(q,e,S) \rightarrow (q,e)$; $(q,0,0) \rightarrow (q,e)$; $(q,1,1) \rightarrow (q,e)$; $(q,e,Z_0) \rightarrow (q,e)$

This is not a ***DPDA*** *since the* ***4*** *production transitions for* ***S*** *jointly violate the conditions of a* ***DPDA*** **.**