

CS 302

REMOTE QUIZ 7

14 December, 2020

ANSWERS

(a) (4 pts) $G = (S, \{a,b,c\}, R, S)$ where R is given by :

$$S \rightarrow aSa \mid bSb \mid c$$

(b) (6 pts) The DPDA P has the following transitions

$$(q_0, e, Z_0) \rightarrow (s, SZ_0)$$

$$(s, a-b-c, S) \rightarrow (q_a - q_b - q_c, S)$$

$$(q_a, e, S) \rightarrow (s, Sa)$$

$$(q_b, e, S) \rightarrow (s, Sb)$$

$$(q_c, e, S) \rightarrow (s, e)$$

$$(s, a, a) \rightarrow (s, e)$$

$$(s, b, b) \rightarrow (s, e)$$

$$(s, e, Z_0) \rightarrow (f, Z_0) \text{ for } L(P) ; \text{ or } (s, e, Z_0) \rightarrow (s, e) \text{ for } N(P)$$

where f is the only final state for $L(P)$