

QUIZ 8 (REMOTE)**ANSWER**

$$S \rightarrow a S b \mid A ; A \rightarrow b A \mid c$$

(a) (5 pts) $L_G = \{ a^n b^k c b^n ; k, n \geq 0 \}$

(b) (5 pts) First Convert CFG to GNF :

$$S \rightarrow a S b \mid b A \mid c ; A \rightarrow b A \mid c$$

Let q_a q_b and q_c be the look-ahead states then PDA (production) transitions are :

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

$$(q_a, e, S) \rightarrow (s, Sb) ; (q_b, e, S) \rightarrow (s, A) ; (q_c, e, S) \rightarrow (s, e)$$

$$(q_b, e, A) \rightarrow (s, A) ; (q_c, e, A) \rightarrow (s, e)$$

In addition to the start , end and the input shaving transitions