

**CS 302**

3 December, 2019

**QUIZ 8****Duration : 15 minutes*****Do not forget to write your name on your paper !*****QUESTION**

Consider the PDA,  $P = ((q_0, q, f), (0, 1, 2), (Z_0, 0, 1), \delta, q_0, Z_0, \{f\})$  where  $\delta$  is given by the following transitions :

$$(q_0, 0, X) \rightarrow (q_0, 0X) ; X=0,1, Z_0$$
$$(q_0, 1, X) \rightarrow (q_0, 1X) ; X=0,1, Z_0$$
$$(q_0, 2, X) \rightarrow (q, X) ; X=0,1, Z_0$$
$$(q, 1, 1) \rightarrow (q, e)$$
$$(q, 0, 0) \rightarrow (q, e)$$
$$(q, e, Z_0) \rightarrow (f, Z_0)$$

**(a)** (3 pts) Is  $P$  above a DPDA ? Explain.

**(b)** (7 pts) State the language  $L$  accepted (by final state ) by the PDA  $P$  above.