

CMPE 222
Spring 2017
Popup Quiz #2 (graded)

Duration: 30 minutes (sharp!)

NAME:

ID:

GRADE:

L is the following language :

$L = \{\omega \mid \omega = a^x b^y c^z a^y b^x, x \geq 0, y \geq 0, z \geq 0\}$ and $\Sigma = \{a, b, c\}$

1. **(10 pts)** Write 5 strings in L and 5 strings **not** in L (all strings you write should be from the alphabet Σ)
2. **(40 pts)** Design a PDA (push-down automaton) that recognizes L.
3. **(40 pts)** Write a context-free grammar that describes strings in L.