BLG 311E – FORMAL LANGUAGES AND AUTOMATA
SPRING 2016
HOMEWORK 4

1) Use pumping lemma to prove that the language defined below is non-regular (i.e. cannot be accepted by any finite automaton).

$$L = cc^r \mid c \in \{0,1\}^*$$

2) For the language $L = \{a^i b^{i+j} a^j \mid i > 0, j \geq 0\}$,

a) Write the grammar production rules.
b) Design a PDA for this language.
c) Show how the strings $aabbba$ and $aaabbb$ are accepted by the PDA you designed.

IMPORTANT: You must do this homework **by hand** and **submit it using the box in the secreteriat**.