BLG 311E – FORMAL LANGUAGES AND AUTOMATA
SPRING 2017
HOMEWORK 6

1. 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.

2. Design a pushdown automaton (PDA) that recognizes the following language.

$$L(G) = \{a^k b^m c^n \mid k, m, n > 0 \text{ and } k = 2m + n\}$$

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