Exercise 10 – Properties of Context-Free Languages

Consider the following context-free grammar (CFG) G:

$S \rightarrow AX$
$A \rightarrow aAa \mid bAb \mid c$
$X \rightarrow aX \mid Xc \mid A \mid \varepsilon$

(a) Obtain the CNF (Chomsky Normal Form) equivalent of G. Show each step of the conversion process.