**SIMPLIFICATION OF CFG**

1. There are three ducks named **S**eijo, **A**jo,and **B**joswimming around in a pond. **S**eijo is swimming along with **A**jo who is on her left hand side and **B**jo is swimming on her right hand side. **S**eijo is the head of the three ducks who are playing in the pond. Sometimes **S**eijo will also swim alone (no one-ξ with her) in a pond. Few days later **A**jo is swimming along with her sibling name “**arino**” in LHS and friend **S**eijo who is in her RHS. Also,the arino learned swimming from **Aj**o. One day there is a competition which is conducted by **Bj**o. Seijo won “twice” but appeared before and after “**binjo**” who is a child of **B**jo. Later, binjo won twice in swimming, and also **A**jo won one time.

(Consider all names Seijo-S,Ajo-A,Bjo-B, arino-a,binjo-b as Grammar symbols, write the production rule from the above passage and simplify the given CFG).

1. Consider the following set of productions of CFG and simplify.

S->ABC

A->aAb|ξ

B->b

C->aC|a|ξ

1. Simplify the following Context Free Grammar

A->01XY

X->1XY|ξ

Y->YXa|X|ξ