

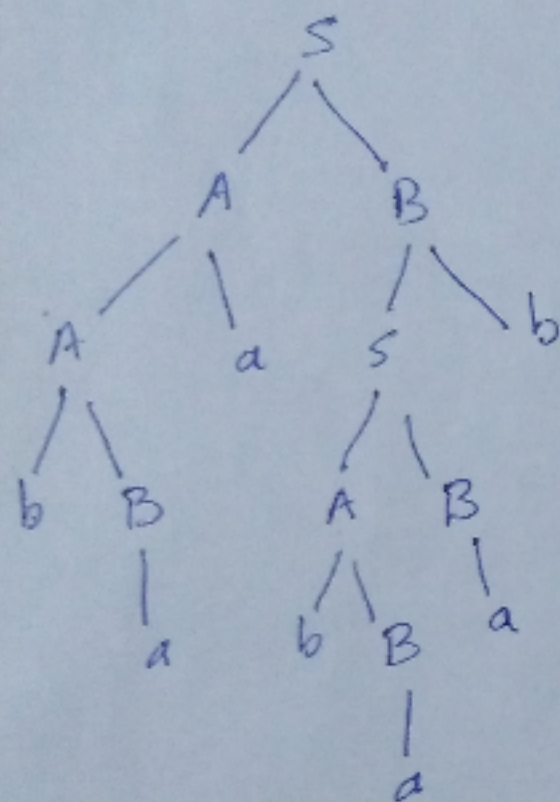
Exn = 2

G Does not regular, because it contains two rules

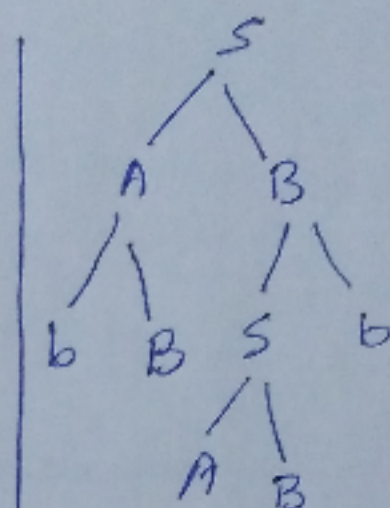
$A \rightarrow Aa|bB$ one linear on the left and the second

linear on the right, also $S \rightarrow AB$

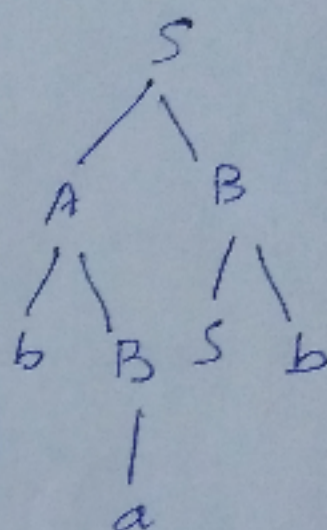
$\Rightarrow G$ is Context-Free (Algebraic), Type 2



b a a b a a b



b B A B b



b a S b

$S \xrightarrow{1} AB \xrightarrow{2} AaB \xrightarrow{3} bBaB \xrightarrow{4} baaB \xrightarrow{5} baaSb$
 $\xrightarrow{1} baaABb \xrightarrow{3} b aab BBb \xrightarrow{4} b a a b a a b$ (Left derivation)

$S \xrightarrow{1} AB \xrightarrow{5} ASb \xrightarrow{1} AABb \xrightarrow{4} AAab \xrightarrow{3} AbBab$
 $\xrightarrow{4} Aba a b \xrightarrow{2} Aa b a a b \xrightarrow{3} b B a b a a b$
 $\xrightarrow{4} b a a b a a b$ (Right derivation).