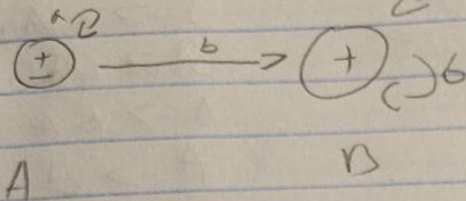


2. (i) $L = a^* b (a+b)^*$



Reg

$$A \rightarrow aA$$

$$A \rightarrow bB$$

$$A \rightarrow \lambda$$

$$B \rightarrow aB$$

$$B \rightarrow bB$$

$$B \rightarrow \lambda$$

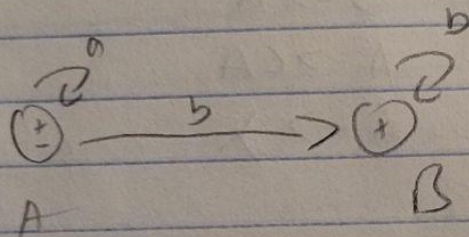
non-reg

$$S \rightarrow AB$$

$$A \rightarrow aA \mid bB \mid \lambda$$

$$B \rightarrow aB \mid bB \mid \lambda$$

(ii) $L = a^* b^*$



Reg

$$A \rightarrow aA \mid bB \mid \lambda$$

$$B \rightarrow bB \mid \lambda$$

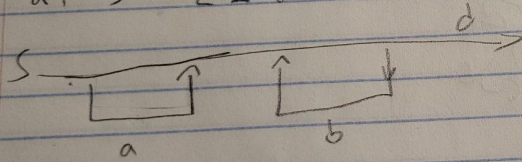
non-reg

$$S \rightarrow AB$$

$$A \rightarrow aA \mid \lambda$$

$$B \rightarrow bB \mid \lambda$$

3. a. $S \rightarrow [a] \{b\} d$



BNF

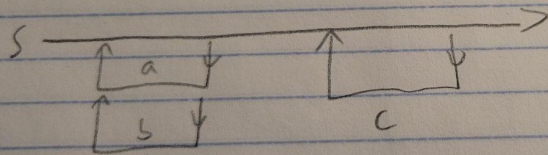
$S \rightarrow aA$

$S \rightarrow A$

$A \rightarrow bA$

$A \rightarrow d$

b. $S \rightarrow \{a\} \{b\} \{c\}$



BNF

$S \rightarrow aS$

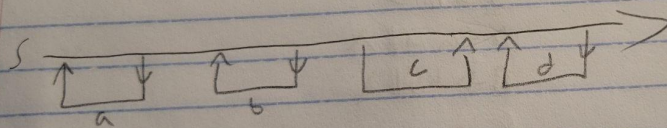
$S \rightarrow bS$

$S \rightarrow A$

$A \rightarrow cA$

$A \rightarrow \lambda$

c. $\{a\} \{b\} [c] \{d\}$



BNF

$S \rightarrow aS$

$S \rightarrow A$

$A \rightarrow bA$

$A \rightarrow B$

$B \rightarrow cD$

$B \rightarrow D$

$D \rightarrow dD$

$D \rightarrow \lambda$