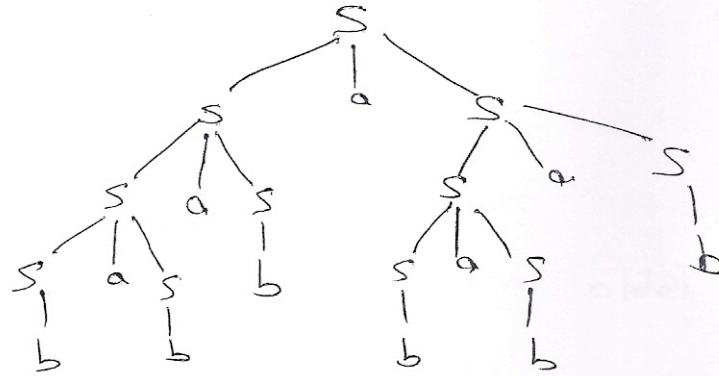


**BİÇİMSEL DİLLER ve OTOMATLAR**  
**ÖDEV 2**  
**ÇÖZÜMLER**

Soru 1. Tip 2

a.)



bababababab

b.)  $L(M) = (ba)^* b$

Grammar:

$A ::= bB \mid b$

$B ::= aA$

## Soru 2

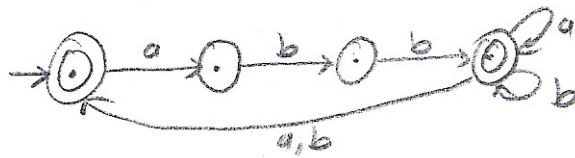
a.)

$S \rightarrow a$   
 $S \rightarrow b$   
 $S \rightarrow a A a$   
 $S \rightarrow b B b$   
 $A \rightarrow C A C$   
 $B \rightarrow C B C$   
 $A \rightarrow a$   
 $B \rightarrow b$   
 $C \rightarrow a$   
 $C \rightarrow b$

b.) 2. Tip gramerdir.

## Soru 3

3) a) -Tip 3'dür



$(abb(a \vee b)^*)^*$

Böş olan veya abb ile başlayan tüm katarlar

b) -Tip 2'dir.

$L(G) = \{\epsilon\} \cup \{(ab^i c) \dots (ab^i c)(cbc)^k \mid k \in \mathbb{N}^+ \wedge i, j \in \mathbb{N} \wedge j$

## Soru 4

a.  $R1 \subseteq R1 \cup R2 \rightarrow R1 \subseteq t(R1 \cup R2) \rightarrow t(R1) \subseteq t(R1 \cup R2)$

b.  $t(R2) \subseteq t(R1 \cup R2) \rightarrow t(R1) \cup t(R2) \subseteq t(R1 \cup R2)$