

(1) <a>  
    <c>  
        xyz  
    </c>  
</a>



(2) <a>  
    <b>  
        <c> 12 </c>  
        <d> 34 </d>  
        <d> 56 </d>  
    </b>  
</a>

There can't be 2 d-  
elements without 2 c-  
elemens

(3) <a>  
    <b>  
        <d> 555 </d>  
        <c> 444 </c>  
        <d> 333 </d>  
    </b>  
    <c> 666 </c>  
</a>

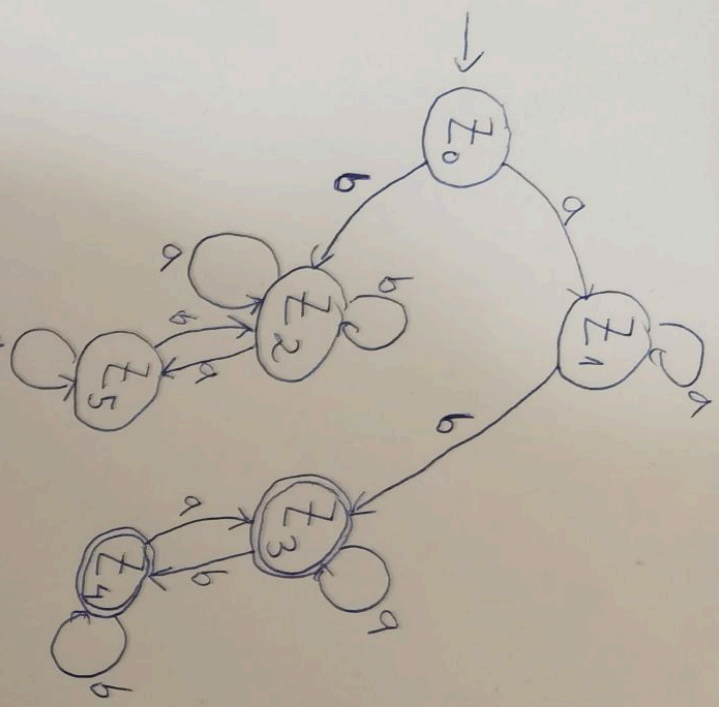
Same as before, there  
has to be c-element  
with d-element

And order of d-  
element and c-  
element are not good

(4) <a>  
    <b>  
        <c> rrr </c>  
        <c> sss </c>  
        <d> ttt </d>  
        <c> uuu </c>  
    </b>  
</a>



a)



b) only strings with first 'ab' are possible!

(1)  $ba \Rightarrow Z_0 - Z_2$  - impossible

(2) impossible

(3) impossible

(4) abababaaababba - possible because any sequence after 'ab' is possible

c)  $L(A) = ab(ab)^+$

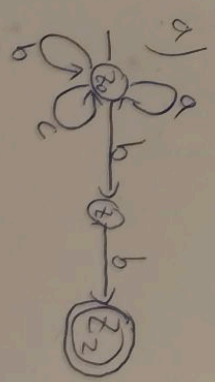
5.6

a)

$Z = \{Z_0, Z_1, Z_2\}$   
 $\Sigma = \{a, b, c\}$   
 $F = \{Z_2\}$   
 $\delta(Z_0, a) = Z_0$   
 $\delta(Z_0, b) = Z_0$   
 $\delta(Z_0, c) = Z_0$   
 $\delta(Z_1, b) = Z_1$   
 $\delta(Z_1, a) = Z_2$   
 $\delta(Z_2, b) = Z_2$

b)

$Z = \{Z_0, Z_1, Z_2\}$   
 $\Sigma = \{a, b, c\}$   
 $F = \{Z_2\}$   
 $\delta(Z_0, b) = Z_2$   
 $\delta(Z_0, c) = Z_1$   
 $\delta(Z_1, c) = Z_1$   
 $\delta(Z_1, a) = Z_2$   
 $\delta(Z_2, a) = Z_2$



b)

