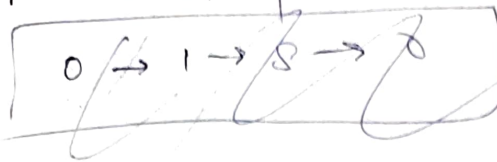
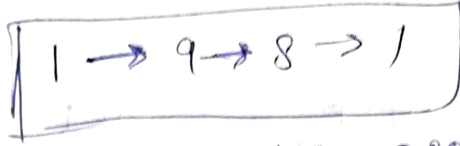


120 CS 0188



We to do  
down counter



100

(+)	(++1)		0001	1001	1000	0001
<u>Q<sub>3</sub> Q<sub>2</sub> Q<sub>1</sub> Q<sub>0</sub></u>	<u>C<sub>3</sub> C<sub>2</sub> C<sub>1</sub> C<sub>0</sub></u>	<u>T<sub>3</sub> T<sub>2</sub> T<sub>1</sub> T<sub>0</sub></u>	flip/flop			
0001	1001	1000	0(t) Q <sub>t+1</sub> T			
1001	1000	0001	0 0 0			
<del>1000</del>	<del>0001</del>	<del>1001</del>	0 1 1			
1000	0001	0001	1 0 1			
			1 1 0			

T<sub>3</sub>

C <sub>3</sub> C <sub>2</sub>	C <sub>1</sub> C <sub>0</sub>	00	01	11	10
00		X	1	X	X
01		X	X	X	X
11		X	X	X	X
10		1	0	X	X

T<sub>2</sub>  
T<sub>1</sub>

C <sub>3</sub> C <sub>2</sub>	C <sub>1</sub> C <sub>0</sub>	00	01	11	10
00		X	0	X	X
01		X	X	X	X
11		X	X	X	X
10		0	0	X	X

$$T_3 = \overline{C_3} + \overline{C_0}$$

$$T_2 = T_1 = C_2$$

T<sub>0</sub>

C <sub>3</sub> C <sub>2</sub>	C <sub>1</sub> C <sub>0</sub>	00	01	11	10
00		X	0	X	X
01		X	X	X	X
11		X	X	X	X
10		1	1	X	X

$$T_0 = C_3$$

