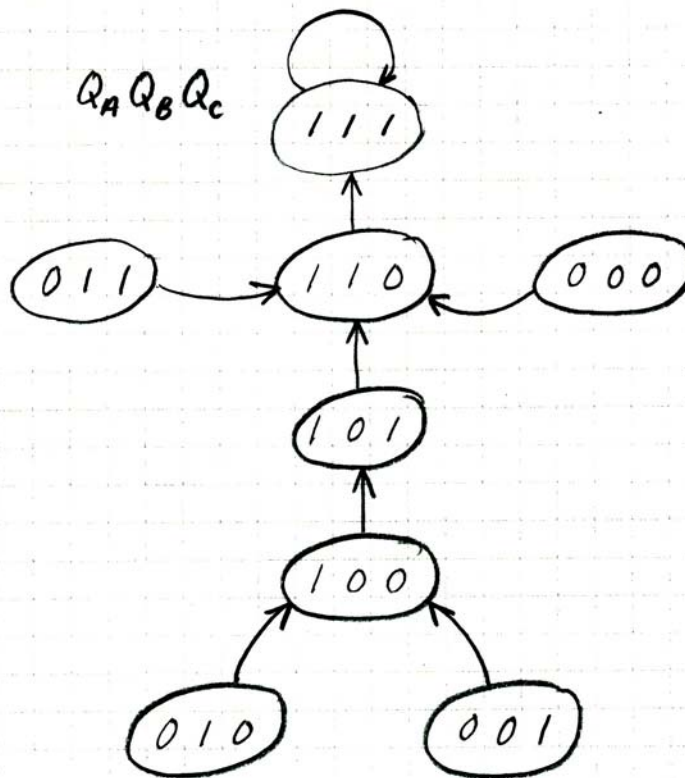


Lösningförslag till dugga 3 i TMEL53 Digitalteknik 2014-02-21

1. $T = \bar{Q}_A$ $S = \overline{(Q_A \oplus Q_C)} + Q_B$

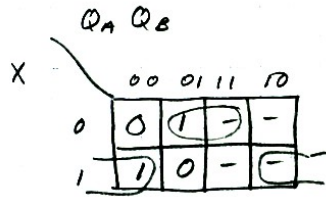
$R = Q_B \bar{Q}_A \bar{Q}_C$ $D = Q_A (Q_B + \bar{Q}_C)$

Q_A	Q_B	Q_C	T	S	R	D	Q_A^+	Q_B^+	Q_C^+
0	0	0	1	1	0	0	1	1	0
0	0	1	1	0	0	0	1	0	0
0	1	0	1	0	1	0	1	0	0
0	1	1	1	0	0	0	1	1	0
1	0	0	0	0	0	1	1	0	1
1	0	1	0	1	0	0	1	1	0
1	1	0	0	0	0	1	1	1	1
1	1	1	0	0	0	1	1	1	1

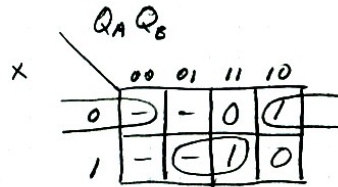


2.

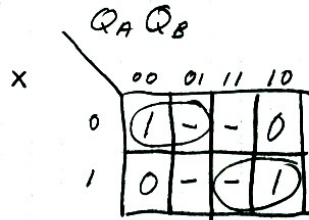
X	Q_A	Q_B	J_A	K_A	J_B	K_B	Q_A^+	Q_B^+
0	0	0	0	-	1	-	0	1
0	0	1	1	-	-	0	1	1
0	1	0	-	1	0	-	0	0
0	1	1	-	0	-	1	1	0
1	0	0	1	-	0	-	1	0
1	0	1	0	-	-	1	0	0
1	1	0	-	0	1	-	1	1
1	1	1	-	1	-	0	0	1



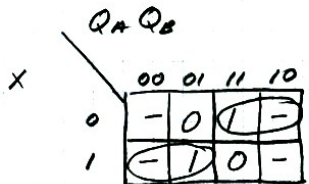
$$J_A = X\bar{Q}_B + \bar{X}Q_B = X \oplus Q_B$$



$$K_A = \bar{X}\bar{Q}_B + XQ_B = \overline{X \oplus Q_B}$$



$$J_B = \bar{X}\bar{Q}_A + XQ_A = \overline{X \oplus Q_A}$$



$$K_B = X\bar{Q}_A + \bar{X}Q_A = X \oplus Q_A$$

