

SOLUTION DE EXAMEN DE 2^{ÈME} SEMESTRE

Exercice 01 (08 pts)

Table de vérité de soustracteur complet (1.5 pts)

A	B	R	S	R'	S
0	0	0	0	0	S0
0	0	1	1	1	S1
0	1	0	1	1	S2
0	1	1	0	1	S3
1	0	0	1	0	S4
1	0	1	0	0	S5
1	1	0	0	0	S6
1	1	1	1	1	S7

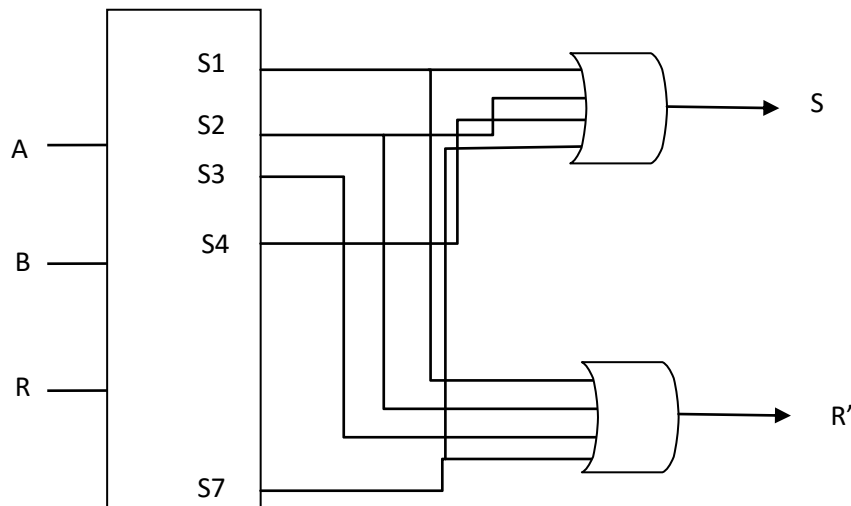
$$S = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} \quad (01 \text{ pts})$$

$$R' = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} + \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} \quad (01 \text{ pts})$$

$$S0 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S1 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S2 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S3 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S4 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S5 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S6 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}}, S7 = \overline{\overline{A}}\overline{\overline{B}}\overline{\overline{R}} \quad (01 \text{ pts})$$

$$S = S1 + S2 + S4 + S7 \quad (01 \text{ pts})$$

$$R' = S1 + S2 + S3 + S7 \quad (01 \text{ pts})$$



(1.5 pts)

Exercice 02 (12 pts)

Q	Q+	J	J
0	0	0	X
0	1	1	X
1	0	X	1
1	1	X	0

(01 pts)

	Q2	Q1	Q0	J2	K2	J1	K1	J0	K0
0	0	0	0	0	X	0	X	1	X
1	0	0	1	0	X	1	X	X	1
2	0	1	0	0	X	X	0	1	X
3	0	1	1	1	X	X	1	X	1
4	1	0	0	X	0	0	X	1	X
5	1	0	1	X	1	0	X	X	1
6	1	1	0	X	X	X	X	X	X
7	1	1	1	X	X	X	X	X	X

(03 pts)

	00	01	11	10
0			X	1
1		1	X	X

	00	01	11	10
0	x	x	X	
1	x	x	X	1

$J_2 = Q_2 + Q_1 Q_0$ (01 pts)

$K_2 = Q_0$ (01 pts)

	00	01	11	10
0		x	X	
1	1	x	X	

	00	01	11	10
0	x		X	x
1	x	1	X	x

$J_1 = \overline{Q_2} Q_0$ (01 pts)

$k_1 = Q_0$ (01 pts)

	00	01	11	10
0	1	1	X	1
1	x	x	X	x

	00	01	11	10
0	x	x	X	x
1	1	1	X	1

$J_1 = 1$ (01 pts)

$k_1 = 1$ (01 pts)

Circuit (02pts)