

SOLUTION de l'interrogation 2023

Solution exercice 1

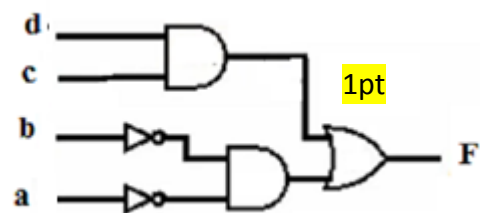
1/

a	b	c	d	F
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	1
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

1pt

ab/cd	00	01	11	10
00	1	0	0	0
01	1	0	0	0
11	1	1	1	1
10	1	0	0	0

1pt



1pt

$$F = \bar{a} \bar{b} + c d \quad 1pt$$

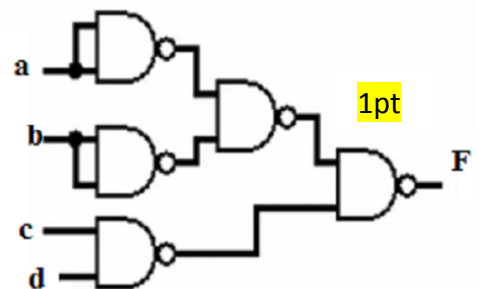
2/

$$F = \bar{a} \bar{b} \bar{c} \bar{d} + \bar{a} \bar{b} \bar{c} d + \bar{a} \bar{b} c \bar{d} + \bar{a} \bar{b} c d + \bar{a} b c d + a \bar{b} c d + a b c d \quad 1pt$$

$$F = \text{produit (9 Mintermes)} (a + \bar{b} + c + d)(a + \bar{b} + c + \bar{d}) \quad 1pt$$

3/

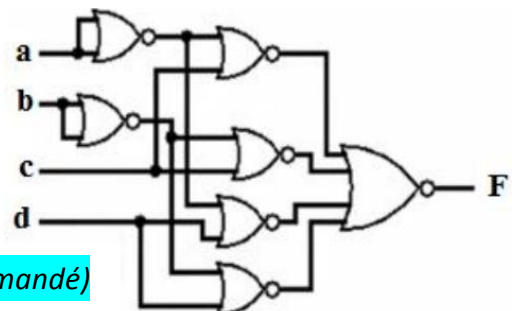
$$F = \overline{\bar{a} \bar{b} + c d} = \overline{\bar{a} \bar{b}} \cdot \overline{c d} \quad 1pt$$



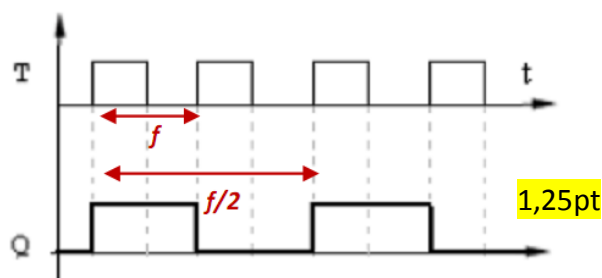
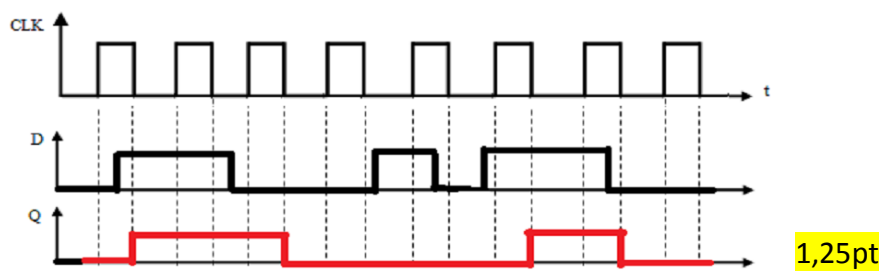
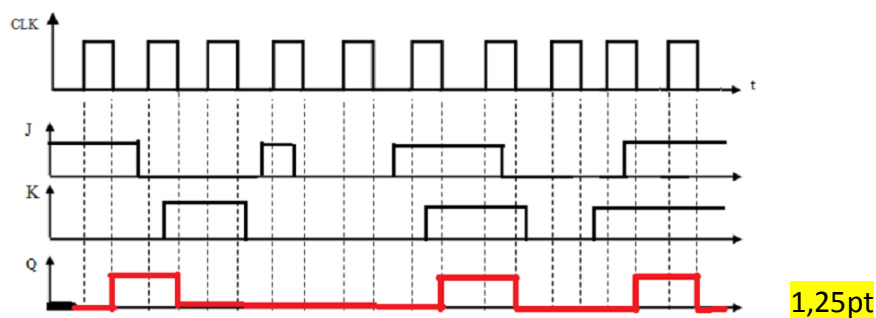
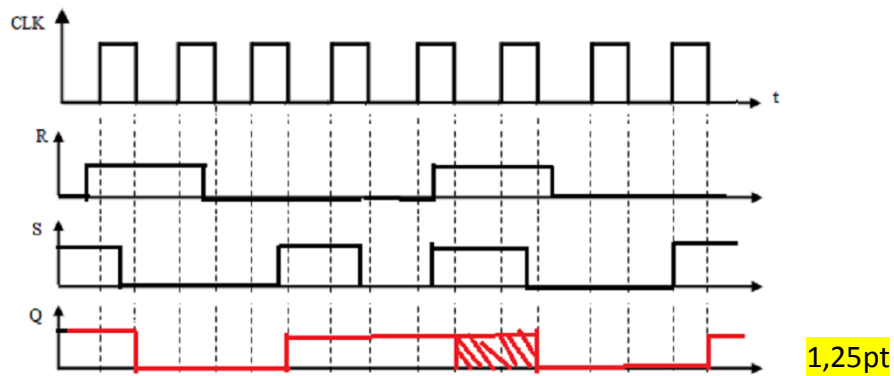
1pt

$$\begin{aligned} F &= \bar{a} \bar{b} + c d = \overline{(\bar{a} + c)(\bar{a} + d)(\bar{b} + c)(\bar{b} + d)} \\ &= \overline{(\bar{a} + c)(\bar{a} + d)} + \overline{(\bar{b} + c)(\bar{b} + d)} \\ &= \overline{(\bar{a} + c)} + \overline{(\bar{a} + d)} + \overline{(\bar{b} + c)} + \overline{(\bar{b} + d)} \end{aligned}$$

+1pt (c'est pas demandé)



Solution exercice 2



Rq : la bascule T asynchrone et divise la fréquence /2

1pt

Remarques :

➤ Présences / 4pts

1 absence non justifié 3.75/4

2 absences non justifiées 3/4

3 absences non justifiées 1/4

Plus de 3 absences 0/6

➤ Préparation + assiduité + participation tableau /2pts