

Corrigé type

Cours :

1448	:	2	=	724	reste	=	0		binaire	10110101000
724	:	2	=	362	reste	=	0			
362	:	2	=	181	reste	=	0			
181	:	2	=	90	reste	=	1		octal	10 110 101 000
90	:	2	=	45	reste	=	0			2 6 5 0
45	:	2	=	22	reste	=	1			
22	:	2	=	11	reste	=	0		hexadécimal	101 1010 1000
11	:	2	=	5	reste	=	1			5 A 8
5	:	2	=	2	reste	=	1			
2	:	2	=	1	reste	=	0			
1	:	2	=	0	reste	=	1			

$A + AB = A(1 + B) = A$  ,  $A + \bar{A}B = A + AB + \bar{A}B = A + B(A + \bar{A}) = A + B$  ,  
 $\overline{X + Y + Z} = \bar{X} \cdot \bar{Y} \cdot \bar{Z}$  ,  $\overline{X \cdot Y \cdot Z} = \bar{X} + \bar{Y} + \bar{Z}$  En appliquant la loi de Morgan

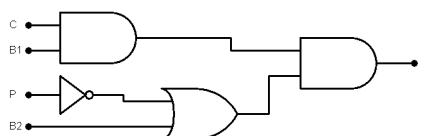
EXERCICE 1 :

Sans tenir compte des cas interdit					
C	B1	P	B2	F	
0	0	0	0	0	
0	0	0	1	0	
0	0	1	0	0	
0	0	1	1	0	
0	1	0	0	0	
0	1	0	1	0	
0	1	1	0	0	
0	1	1	1	0	
1	0	0	0	0	
1	0	0	1	0	
1	0	1	0	0	
1	0	1	1	0	
1	1	0	0	1	
1	1	0	1	1	
1	1	1	0	0	
1	1	1	1	1	

La première forme canonique

$F = C \cdot B_1 \cdot \bar{P} \cdot \bar{B}_2 + C \cdot B_1 \cdot \bar{P} \cdot B_2 + C \cdot B_1 \cdot P \cdot B_2$

$F = C \cdot B_1 \cdot (\bar{P} + B_2)$



Exercice 2 :

$$F1 = \bar{A} \cdot \bar{B} \cdot \bar{C} + A \cdot B \cdot C$$

$$F2 = \bar{C} + \bar{A} \cdot B + A \cdot \bar{B}$$

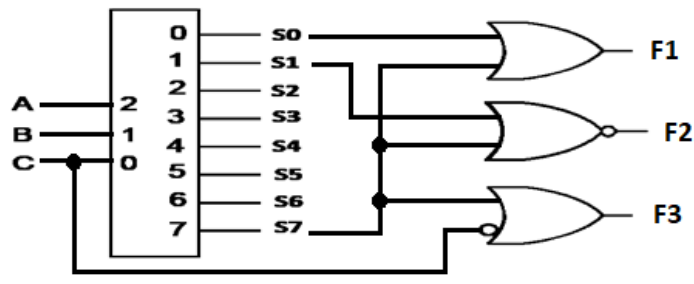
$$F3 = \bar{C} + A \cdot B$$

A	B	C	S0	S1	S2	S3	S4	S5	S6	S7	$S0 = \bar{A} \cdot \bar{B} \cdot \bar{C}$ $S1 = \bar{A} \cdot \bar{B} \cdot C$ $S2 = \bar{A} \cdot B \cdot \bar{C}$ $S3 = \bar{A} \cdot B \cdot C$ $S4 = A \cdot \bar{B} \cdot \bar{C}$ $S5 = A \cdot \bar{B} \cdot C$ $S6 = A \cdot B \cdot \bar{C}$ $S7 = A \cdot B \cdot C$
0	0	0	0	1	0	0	0	0	0	0	
0	0	1	0	0	1	0	0	0	0	0	
0	1	0	0	0	0	1	0	0	0	0	
0	1	1	0	0	0	0	1	0	0	0	
1	0	0	0	0	0	0	0	1	0	0	
1	0	1	0	0	0	0	0	0	1	0	
1	1	0	0	0	0	0	0	0	0	1	
1	1	1	0	0	0	0	0	0	0	1	

$$F1 = S0 + S7$$

$$F2 = \overline{S1 + S7}$$

$$F3 = \bar{C} + S7$$



Exercice 3 :

$$F(A, B, C, D) = \bar{A}\bar{B}(D + C) + \bar{A}BC + A\bar{B}D + AB(D + C)$$

Un multiplexeur 4 vers 1 (2 entrées de sélection appelées X et Y et sortie S :

$$S = \bar{X}\bar{Y}D_0 + \bar{X}YD_1 + X\bar{Y}D_2 + XYD_3$$

X	Y	D <sub>0</sub>	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>
A	B	D+C	C	D	D+C

