2008 1S(A) GS 2

2.- Ley idempotencia: $a+a=a$ ó $a \cdot a = a \Rightarrow \underline{d}$ (Pg 117)

2008 1S(A) GS 13

13.- $f(c,b,a) = (\bar{c}b + ac\bar{b})(b+\bar{a}) \rightarrow$ Función canónica

$$f(c,b,a) = \underbrace{\bar{c}bb}_{\bar{c}b} + \underbrace{\bar{c}b\bar{a}}_{\bar{c}b\bar{a}} + c\underbrace{\bar{b}b}_{0}a + c\bar{b}\underbrace{a\bar{a}}_{0} = \bar{c}b + \bar{c}b\bar{a}$$

$$f(c,b,a) = \underbrace{\bar{c}b\bar{a}}_{2} + \underbrace{\bar{c}ba}_{3} + \underbrace{\bar{c}b\bar{a}}_{2} = m_2 + m_3 \Rightarrow \underline{a}$$

2008 1S(A) GS 16

16.- $f(a,b,c) = (a\bar{b} + c(\bar{a}+b))(b+c) \rightarrow$ Maxterm

$$(a\bar{b} + \bar{a}c + bc)(b+c) =$$

$$f(a,b,c) = a\underbrace{\bar{b}b}_{0} + \bar{a}bc + \underbrace{bbc}_{bc} + a\bar{b}c + \underbrace{\bar{a}cc}_{\bar{a}c} + \underbrace{bcc}_{bc}$$

$$f(a,b,c) = \underbrace{\bar{a}bc}_{3} + \underbrace{\bar{a}bc}_{3} + \underbrace{abc}_{7} + \underbrace{a\bar{b}c}_{5} + \underbrace{\bar{a}\bar{b}c}_{1} + \underbrace{\bar{a}bc}_{3} + \underbrace{\bar{a}bc}_{3} + \underbrace{abc}_{7}$$

$$f(a,b,c) = \sum m(1,3,5,7) \Rightarrow \overline{f(a,b,c)} = m_0 + m_2 + m_4 + m_6$$

$$f(a,b,c) = \overline{m_0 + m_2 + m_4 + m_6} = \overline{m_0} \cdot \overline{m_2} \cdot \overline{m_4} \cdot \overline{m_6} = M_7 \cdot M_5 \cdot M_3 \cdot M_1$$

$$f(a,b,c) = \prod(1,3,5,7) \Rightarrow \underline{a}$$

2008 1S(A) AO 3

3) $f(c,b,a) = \sum_3 (0,1,2,4,5,6)$

c \ ba	00	01	11	10
0	1 (0)	1 (1)	(3)	1 (2)
1	1 (4)	1 (5)	(7)	1 (6)

$f = \bar{b} + \bar{a}$

luego la $\underline{a}$

2008 1S(A) AO 4

4) $f = M_0 \cdot M_2 \cdot M_4 \cdot M_6 \cdot M_8 \cdot M_{10} \cdot M_{12} \cdot M_{14}$

$\overline{\overline{f}} = \overline{M_{15} \cdot M_{13} \cdot M_{11} \cdot M_9 \cdot M_7 \cdot M_5 \cdot M_3 \cdot M_1} = f$

$f = \overline{M}_{15} + \overline{M}_{13} + \overline{M}_{11} + \overline{M}_9 + \overline{M}_7 + \overline{M}_5 + \overline{M}_3 + \overline{M}_1$

$f = m_0 + m_2 + m_4 + m_6 + m_8 + m_{10} + m_{12} + m_{14}$ luego la **c**

2008 2S(A) AO 13

13) $f(c,b,a) = (\bar{c} \cdot b + a \cdot c \cdot \bar{b})(b + \bar{a}) = \bar{c} b \cdot b + \bar{c} b \bar{a} + ac\cancel{\bar{b}b} +$

$+ ac\cancel{\bar{b}}\bar{a} = \bar{c}b + \bar{c}b\bar{a} = \bar{c}b(1+\bar{a}) = \bar{c}b = \bar{c}b\bar{a} + \bar{c}ba =$

$= m_2 + m_3$ luego la **a**

2008-2S-GS-4

La salida de una AND: vale 1 sólo si todas y cada una de las variables de entrada son simultaneamente 1 $\Rightarrow$ **b**

2008-2S-GS-13

$f = (ab + c + d)(\bar{c} + d)(\bar{c} + d + e) = (ab\bar{c} + abd + \underbrace{c\bar{c}}_{\emptyset} + cd + d\bar{c} + \underbrace{dd}_{d})(\bar{c} + d + e) =$

$f = (\underbrace{d(\underbrace{ab + c + \bar{c} + 1}_{1})}_{d} + ab\bar{c})(\bar{c} + d + e) = (d + ab\bar{c})(\bar{c} + d + e) =$

$f = \cancel{d\bar{c}} + \underbrace{dd}_{d} + \cancel{de} + \underbrace{ab\bar{c}\bar{c}}_{ab\bar{c}} + ab\cancel{d} + ab\bar{c}e = d + ab\bar{c} \Rightarrow$ **b**

$ab\bar{c}(1+e) = ab\bar{c}$

2008-2S-GS-18

$f(a,b,c) = \overline{(\overline{a+b})(b+c)}$ → en minitérminos

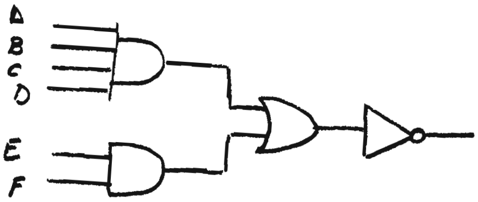
$f(a,b,c) = \overline{\overline{a+b}} + \overline{b+c} = a + b + \bar{b} \cdot \bar{c} = a\bar{b}\bar{c} + a\bar{b}c + ab\bar{c} + abc + b + \bar{b}\bar{c} =$

$f(a,b,c) = \underbrace{a\bar{b}\bar{c}}_{4} + \underbrace{a\bar{b}c}_{5} + \underbrace{ab\bar{c}}_{6} + \underbrace{abc}_{7} + \underbrace{\bar{a}b\bar{c}}_{2} + \underbrace{\bar{a}bc}_{3} + \underbrace{ab\bar{c}}_{6} + \underbrace{abc}_{7} + \underbrace{\bar{a}\bar{b}\bar{c}}_{0} + \underbrace{a\bar{b}\bar{c}}_{4} =$

$f(a,b,c) = \Sigma(0, 2, 3, 4, 5, 6, 7) \Rightarrow$ **a**

2008-ES-GS-18

La expresión de salida para un circuito AND-OR-Inversor que consta de una puerta AND con entradas A, B, C y D y otra puerta AND con las entradas EF



$\overline{abcd + ef} = \overline{abcd} \cdot \overline{ef} = (\bar{a}+\bar{b}+\bar{c}+\bar{d}) \cdot (\bar{e}+$

d

2008-Sep (A)-GS-6

Es falso: La expresión canónica de la función a partir de su tabla de la verdad se obtiene multiplicando los minterms en los que la función valga "cero".

⇓

d

2008-Sep (A)-GS-14

$f = \overline{\overline{a+b\cdot c} + \bar{a} + \bar{b} \cdot d + \bar{c}\,\bar{d}} \longrightarrow$ Morgan

$f = \overline{\overline{a+b\cdot c}} \cdot a \cdot \overline{\bar{b}d} \cdot \overline{\bar{c}\bar{d}} = [(a+b)+\bar{c}] \cdot a \cdot (b+\bar{d}) \cdot (c+d) \Rightarrow$ c

2008-Sep (A)-GS-15

$f(a,b,c,d) = \overline{(ab + bc\bar{d})} + \bar{a}c\bar{d} = \overline{ab} \cdot \overline{bc\bar{d}} + \bar{a}c\bar{d} =$

$f = (\bar{a}+\bar{b})(\bar{b}+\bar{c}+d) + \bar{a}c\bar{d} = \cancel{\bar{a}\bar{b}} + \bar{a}\bar{c} + \bar{a}d + \underbrace{\bar{b}\bar{b}}_{\bar{b}} + \cancel{\bar{b}\bar{c}} + \cancel{\bar{b}d} + \bar{a}c\bar{d} =$

$f = \bar{a}\bar{c} + \bar{a}d + \bar{b} + \bar{a}c\bar{d} = \underset{0}{\underline{\bar{a}\bar{b}\bar{c}\bar{d}}} + \underset{1}{\underline{\bar{a}\bar{b}\bar{c}d}} + \underset{4}{\underline{\bar{a}b\bar{c}\bar{d}}} + \underset{5}{\underline{\bar{a}b\bar{c}d}} + \underset{1}{\underline{\bar{a}\bar{b}\bar{c}d}} +$

$+ \underset{3}{\underline{\bar{a}\bar{b}cd}} + \underset{5}{\underline{\bar{a}b\bar{c}d}} + \underset{7}{\underline{\bar{a}bcd}} + \underset{4}{\underline{\bar{a}\bar{b}\bar{c}\bar{d}}} + \underset{1}{\underline{\bar{a}b\bar{c}d}} + \underset{2}{\underline{\bar{a}bc\bar{d}}} + \underset{3}{\underline{\bar{a}bcd}} +$

$+ \underset{8}{\underline{a\bar{b}\bar{c}\bar{d}}} + \underset{9}{\underline{a\bar{b}\bar{c}d}} + \underset{10}{\underline{a\bar{b}c\bar{d}}} + \underset{11}{\underline{a\bar{b}cd}} + \underset{2}{\underline{\bar{a}\bar{b}c\bar{d}}} + \underset{6}{\underline{\bar{a}bc\bar{d}}} =$

$f = \Sigma(0,1,2,3,4,5,6,7,8,9,10,11) \Rightarrow$ d

2008_Sep_Res (C)_GS_10

¿Qué regla establece que si una entrada de una puerta AND es siempre 1, la salida es igual a la otra entrada?

$$A \cdot 1 = A \quad \Rightarrow \underline{d}$$

2008_Sep_Res (C)_GS_14

Simplificar $\longrightarrow \quad x\bar{z}y + (x\bar{z}y + z\bar{x})(y(z+x) + \bar{y}z + \bar{y}x\bar{z})$

$$f = x\bar{z}y + (x\bar{z}y + z\bar{x})(yz + yx + \bar{y}z + \bar{y}x\bar{z}) =$$

$$z(\underbrace{y+\bar{y}}_{1}) = z$$

$$f = x\bar{z}y + \underbrace{\cancel{x\bar{z}yz}}_{0} + \underbrace{x\bar{z}yyx}_{x\bar{z}y} + \underbrace{\cancel{x\bar{z}y\bar{y}x\bar{z}}}_{0} + \underbrace{z\bar{x}z}_{z\bar{x}} + \underbrace{\cancel{z\bar{x}yx}}_{0} + \underbrace{z\bar{x}\bar{y}}_{z\bar{x}\bar{y}} + \underbrace{\cancel{z\bar{x}\bar{y}x\bar{z}}}_{0} =$$

$$f = x\bar{z}y + x\bar{z}y + z\bar{x} + z\bar{x}\bar{y} = x\bar{z}y + z\bar{x} \Rightarrow \underline{a}$$

$$x\bar{z}y \qquad \underbrace{z\bar{x}(\underbrace{1+\bar{y}}_{1})}_{z\bar{x}}$$

2008_Sep_Res (C)_GS_18

$$f(a,b,c,d) = (\bar{a}+\bar{c}+\bar{d})(\bar{a}+\bar{b}+d)(a+\bar{b}+\bar{c})(a+b+\bar{c})$$

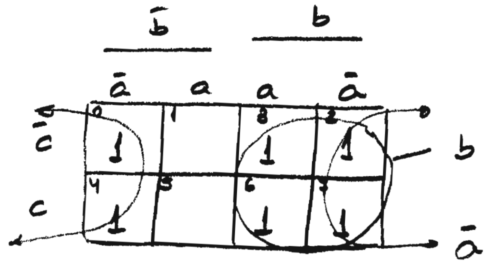
$$\underset{0}{(\bar{a}+\bar{b}+\bar{c}+\bar{d})}\underset{4}{(\bar{a}+b+\bar{c}+\bar{d})} \qquad \underset{1}{(\bar{a}+\bar{b}+\bar{c}+d)}\underset{3}{(\bar{a}+\bar{b}+c+d)}$$

$$\underset{8}{(a+\bar{b}+\bar{c}+\bar{d})}\underset{9}{(a+\bar{b}+\bar{c}+d)} \qquad \underset{12}{(a+b+\bar{c}+\bar{d})}\underset{13}{(a+b+\bar{c}+d)}$$

$$f(a,b,c,d) = M_0\, M_1\, M_3\, M_4\, M_8\, M_9\, M_{12}\, M_{13} \Rightarrow \underline{a}$$

2008 - Sep(D) - AO - 4

$f(c,b,a) = \Sigma(0,2,3,4,6,7)$



$f = \bar a + b \Rightarrow$ a

2008 - Sep - Res (C) - AO - 6

El nº de filas de la T.V. de una función de 5 variables

es $\Rightarrow$ $2^5 = 32 \Rightarrow$ C

2008 - Sep - Res (C) - AO - 11

$f(a,b,c) = \overline{\overline{a+b}\,(b+c)} \longrightarrow$ a minterm

$f(a,b,c) = \overline{\overline{a+b}} + \overline{b+c} = a + b + \bar b \cdot \bar c =$

$f = \underbrace{a\bar b\bar c}_{4} + \underbrace{a\bar b c}_{5} + \underbrace{ab\bar c}_{6} + \underbrace{abc}_{7} + \underbrace{\bar a b\bar c}_{2} + \underbrace{\bar a bc}_{3} + \underbrace{ab\bar c}_{6} + \underbrace{abc}_{7} + \underbrace{\bar a\bar b\bar c}_{0} + \underbrace{a\bar b\bar c}_{4}$

$f = \Sigma(0,2,3,4,5,6,7) \Rightarrow$ a