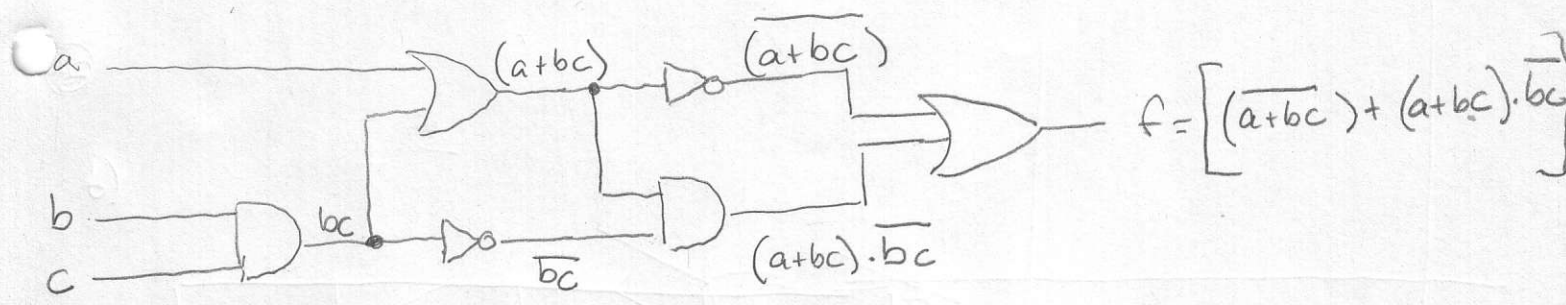


# Ejercicio 2012-3 . E. Digital . Selectividad.



Pasamos a función canónica:

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

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

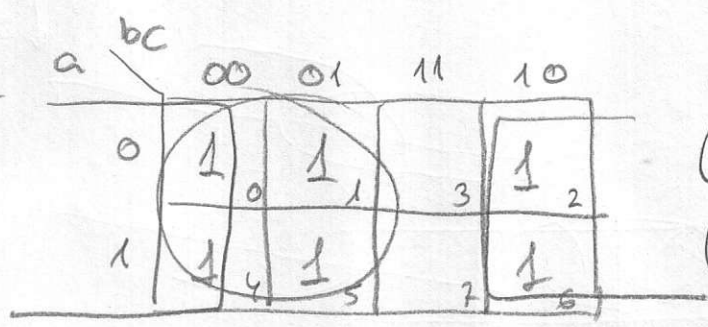
$$= \bar{a}\bar{b} + \bar{a}\bar{c} + a\bar{b} + a\bar{c} + 0 + 0 = \bar{a}\bar{b} + \bar{a}\bar{c} + a\bar{b} + a\bar{c} =$$

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

$$= \underbrace{\bar{a}\bar{b}c}_{(1)} + \underbrace{\bar{a}\bar{b}\bar{c}}_{(0)} + \underbrace{\bar{a}b\bar{c}}_{(2)} + \underbrace{a\bar{b}\bar{c}}_{(0)} + \underbrace{a\bar{b}c}_{(5)} + \underbrace{a\bar{b}\bar{c}}_{(4)} + \underbrace{ab\bar{c}}_{(6)} + \underbrace{abc}_{(7)}$$

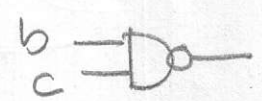
$$f(a,b,c) = \sum_3(0,1,2,4,5,6)$$

m	a	b	c	f
0	0	0	0	1
1	0	0	1	1
2	0	1	0	1
3	0	1	1	0
4	1	0	0	1
5	1	0	1	1
6	1	1	0	1
7	1	1	1	0



Agrupaciones  
 (0-1-4-5):  $\bar{b}$   
 (0-4-2-6):  $\bar{c}$

luego:  $f = \bar{b} + \bar{c} = \overline{bc}$



Otra forma de haberlo hecho:

Suponiendo que:  $(a+bc) = \bar{x}$  y que  $x = (a+bc)$

y que:  $\bar{bc}$  es = y

$f = \bar{x} + xy \Rightarrow$  Nosotros sabemos q el T<sup>2</sup> de la falsa redundancia es:

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

luego  $\bar{x} + xy = \bar{x} + y$

Reemplazando:  $(a+bc) + \bar{bc}$

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

$$= \bar{bc} + \bar{bc} =$$

por T<sup>2</sup> de redundancia

$$= \bar{bc}$$

(OK)