Avaliação 01

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a)

	a	b	c	d	S2	S1	S0
0	0	0	0	0	0	0	0
1	0	0	0	1	0	0	1
2	0	0	1	0	0	0	1
3	0	0	1	1	0	1	0
4	0	1	0	0	0	0	1
5	0	1	0	1	0	1	0
6	0	1	1	0	0	1	0
7	0	1	1	1	0	1	1
8	1	0	0	0	0	0	1
9	1	0	0	1	0	1	0
10	1	0	1	0	0	1	0
11	1	0	1	1	0	1	1
12	1	1	0	0	0	1	0
13	1	1	0	1	0	1	1
14	1	1	1	0	0	1	1
15	1	1	1	1	1	0	0

b) SoP (1,2,4,7,8,11,13,14) =

a'b'c'd + a'b'cd' + a'bc'd'+ a'bcd + ab'c'd' + ab'cd + abc'd + abcd'

c) SoP (3,5,6,7,9,10,11,12,13,14)

a'b'cd + a'bc'd + a'bcd' + a'bcd + ab'c'd + ab'cd' + ab'cd + abc'd' + abc'd + abcd'

d)PoS (0,3,5,6,9,10,12,15)

a+b+c+d * a+b+c'+d' * a+b'+c+d' * a+b'+c'+d * a'+b+c+d' * a'+b+c'+d * a'+b'+c+d * a'+b'+c'+d'

e)

Ab \ cd	00	01	11	10
00		1		1
01	1		1	
11		1		1
10	1		1	

a'b'c'd + a'b'cd' + a'bc'd'+ a'bcd + ab'c'd' + ab'cd + abc'd + abcd'

f) !(a + b)&&(c + b) || (a + b)&&!(c + b)

   (a' * b') * (c + d) + (a+b)*(c' * b')

g) BITS

   2 (3- 0011 v | 5 – 0101 v | 6- 0110 v | 9-1001 v| 10-1010 v| 12 – 1100 v)

   3 (7-0111 v| 11-1011 v| 13-1101 v| 14-1110 v)

Agrupamentos de 2/3

(3,7)0_11   A| (3,11)_011 B| (5,7)01_1 C| (5,13)_101 D| (6,7)011_E | (6,14)_110 F|

 (9,11)10_1 G| (9,13)1_01 H| (10,11)101_ I| (10,14)1_10 J| (12,13)110_ K| (12,14)11_0 L

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A				Xm				Xm								
B				X-								X-				
C						Xm		Xm								
D						X-								X-		
E							X-	X-								
F							Xm								Xm	
G										X-		X-				
H										Xm				Xm		
I											X-	X-				
J											Xm				Xm	
K													Xm	Xm		
L													X-		X-	

B + D + E +G I + L= b'cd + bc'd + a'bc + ab'd + ab'c + abd'

h)

Ab\cd	00	01	11	10
00			1	
01		1	1	1
11	1	1		1
10		1	1	1

i) c&&(a + b) || d&&(a + c) || b&&(a + d)

j) s2 = SoP(15) = abcd

module método calcular s2(s2,a,b,c,d);

output s2;

input a,b,c,d;

and AND1 (s2,a,b,c,d);

endmodule