PUC-Minas - Ciência da Computação

Prova 01

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	Abcd	**Saídas**	**S2**	**S1**	**S0**
0	**0000**	**2**	0	1	0
1	**0001**	**1**	0	0	1
2	**0010**	**1**	0	0	1
3	**0011**	**1**	0	0	1
4	**0100**	**4**	1	0	0
5	**0101**	**2**	0	1	0
6	**0110**	**1**	0	0	1
7	**0111**	**1**	0	0	1
8	**1000**	**4**	1	0	0
9	**1001**	**4**	1	0	0
10	**1010**	**2**	0	1	0
11	**1011**	**1**	0	0	1
12	**1100**	**4**	1	0	0
13	**1101**	**4**	2	0	0
14	**1110**	**4**	1	0	0
15	**1111**	**2**	0	1	0

S2

ab/cd	00	01	11	10
00	0(0)	0(1)	0(3)	0(2)
01	**1(4)**	0(5)	0(7)	0(6)
11	**1(12)**	**1(13)**	0(15)	**1(14)**
10	**0(8)**	**0(9)**	0(11)	0(10)

S3

ab/cd	00	01	11	10
00	**1(0)**	0(1)	0(3)	0(2)
01	0(4)	**1(5)**	0(7)	0(6)

11	0(12)	1(13)	**1(15)**	0(14)
10	0(8)	0(9)	0(11)	**1(10)**

S0

ab/cd	00	01	11	10
00	0(0)	**1(1)**	**1(3)**	**1(2)**
01	0(4)	0(5)	**1(7)**	**1(6)**
11	0(12)	0(13)	0(15)	0(14)
10	0(8)	0(9)	**1(11)**	0(10)

1)

a)S2 = (a'*b*c'*d') + (a*b'*c'*d') + (a*b'*c'*d) + (a*b*c'*d') + (a*b*c'*d) + (a*b*c*d')

b)S1 = $\prod$ m(1,2,3,4,6,7,8,9,11,12,13,14)

c)S0 = (a'+b'+c'+d) * (a'+b'+c+d') * (a+b'+c+d) * (a'+b+c+d') * (a'+b+c+d) * (a+b'+c+d)

d) A = (8,9,12,13) = ac' , B = (4,12) = bc'd' , C = (12,14) = abd'

S2 = (a*c') + (b*c'*d') + (a*b*d')

e) A = (a'*b'*c'*d) , B = (a'*b*c'*d'), C = (a*b*c*d) , D = (a*b'*c*d')

S1 = (a'*b'*c'*d) + (a'*b*c'*d') + (a*b*c*d) + (a*b'*c*d')

f) A = (2,3,6,7) = (a'*c), B = (1,3) = (a'*b'*d), C = (3,11) = (b'*c*d)

S0 = (a'*c) + (a'*b'*d) + (b'*c*d)

g) S2 = (a*c') + (b*c'*d') + (a*b*d') = (b*d')(a+c') + (a*c')

h) S1 = (a'*b'*c'*d) + (a'*b*c'*d') + (a*b*c*d) + (a*b'*c*d')

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

(b'*d' + b*d)(a'*c' + a*c) = (bxord)(axorc)

i)S0 = (a'*c) + (a'*b'*d) + (b'*c*d) = (b'*d)(a'*c) + (a*c')

As outras questões estão nos arquivos de verilog nesta pasta