

# TP1 - Introdução aos Sistemas Lógicos

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Tabela Verdade, saída do Verilog

```
VCD info: dumpfile dump.vcd opened for output.
bcd <=> gray
0000 <=> 0000
0001 <=> 0001
0010 <=> 0011
0011 <=> 0010
0100 <=> 0110
0101 <=> 0111
0110 <=> 0101
0111 <=> 0100
1000 <=> 1100
1001 <=> 1101
1010 <=> 1111
1011 <=> 1110
1100 <=> 1010
1101 <=> 1011
1110 <=> 1001
1111 <=> 1000
Finding VCD file...
./dump.vcd
```

a)  $b_3 = AB'C'D' + AB'C'D + AB'CD' + AB'CD + ABC'D' + ABC'D + ABCD' + ABCD$   
 $b_2 = A'BC'D' + A'BC'D + A'BCD' + A'BCD + AB'C'D' + AB'C'D + AB'CD' + AB'CD$   
 $b_1 = A'BC'D' + A'BCD' + ABC'D' + ABCD' + A'B'C'D + A'B'CD + AB'C'D + AB'CD$   
 $b_0 = A'B'CD' + A'BCD' + AB'CD' + ABCD' + A'B'C'D + A'BC'D + AB'C'D + ABC'D$

b)  $b_3 = A$   
 $b_2 = A'B + AB'$   
 $b_1 = BD' + B'D$   
 $b_0 = CD' + C'D$

c) Forma de Ondas do caso teste

		0				10				110				111			
bcd_in[3:0]	0	0	1	10	11	100	101	110	111	1000	1001	1010	1011	1100	1101	1110	1111
gray_out[3:0]	0	0	1	11	10	110	111	101	100	1100	1101	1111	1110	1010	1011	1001	1000
bcd[3:0]	0	0	1	10	11	100	101	110	111	1000	1001	1010	1011	1100	1101	1110	1111
gray[3:0]	0	0	1	11	10	110	111	101	100	1100	1101	1111	1110	1010	1011	1001	1000

d)

