

Lista III

1- a) 783₁₀

0111 1000 0011

b) 1001002 → 310₆

0011 0110

c) 1A₁₆

$$1 \cdot 16^1 + 10 \cdot 16^0 = 16 + 10 = 26$$

0010 0110

d) 109₁₀

0001 0000 1001

e) 455₈

$$4 \cdot 8^2 + 5 \cdot 8^1 + 5 \cdot 8^0 = 256 + 40 + 5 = 301_{10}$$

0011 0000 0001

f) 434₁₆

$$4 \cdot 16^2 + 3 \cdot 16^1 + 4 \cdot 16^0 = 1024 + 48 + 4 = 1076_{10}$$

0001 0000 0111 0110

2-

Decimal	Binário	Gray	Decimal	Binário	Gray
0	'0000'	0000	8	'1000'	1100
1	'0001'	0001	9	'1001'	1101
2	'0010'	0011	10	'1010'	1111
3	'0011'	0010	11	'1011'	1110
4	'0100'	0110	12	'1100'	1010
5	'0101'	0111	13	'1101'	1011
6	'0110'	0101	14	'1110'	1110
7	'0111'	0100	15	'1111'	1000

3-a) $777_8 / 3_8$

$$\begin{array}{r} 777/3 \\ 6 \quad 252_8 \\ 17 \\ 17 \\ 007 \\ 6 \end{array}$$

b) $BF19A_{16} + AE08_{16}$

$$\begin{array}{r} BF19A \\ + AE08 \\ \hline C9FA5_{16} \end{array}$$

c) $11110111_2 + 1100110_2$

$$\begin{array}{r} 11110111 \\ + 1100110 \\ \hline 101011101_2 \end{array}$$

d) $1133_8 * 13_8$

$$\begin{array}{r} 1133 \\ \times 13 \\ \hline 3421 \\ 1133 = \\ \hline 14751_8 \end{array}$$

e) $101101_2 * 110_2$

$$\begin{array}{r} \times 110 \\ 000000 \\ 101101 = \\ 101101 = \\ \hline 100001110_2 \end{array}$$

f) $B01BA_{16} / A_{16} = 10$

$$11 \cdot 16 + 1 \cdot 16 + 1 \cdot 16 + 10 \cdot 16 = 72096 + 256 + 176 + 10 = 72133$$

72133_{10}

$72133_{10} \cdot 2133_{16}$

$$\begin{array}{r} 00008 \quad 64 \quad 4508 \quad 16 \\ 81 \quad 32 \quad 287 \quad 16 \\ 80 \quad 120 \quad 272 \quad 1716 \\ 133 \quad 128 \quad 1946 \quad 1 \\ 188 \quad 28 \quad 11 \\ \hline 15 \quad 12 \end{array}$$

$\rightarrow 119C5$

4-

Escribir los valores
por las bases indicadas.

a) $10011101_2 \rightarrow ^9(16)$

$R = 9, D_{16}$

b) $1000111101_2 \rightarrow ^9(8)$

$R = 43, 15_8$

c) $100111101_2 \rightarrow ^9(8)$

$R = 23, 15_8$

b) $30, 41_{16} \rightarrow ^9(2)$

$$\begin{array}{r} 8421 \\ 0001 \\ 0100 \\ 0000 \\ 0011 \end{array}$$

$R = 110000010000001_2$

4- Converter os valores abaixo com a seguinte potência normalizada

SN: 1bit Exp: 4 bit Trac: 7bit

a) -45,098

1 1011,0100011.2²

1 101101,0001100
-45,09375

x2
0,098 (0) 196
0,196 (0) 392
0,392 (0) 784
0,784 (1) 568
0,568 (1) 136
0,136 (0) 272
0,272 (0) 544
-1-2-3-4-5-6-7
0,001100

b) -0,04527

1 0000,0000101
0,0390625

-1.2⁻⁴ + 1.2⁻⁵
0,0625 + 0,03125
0,09375

x2
0,04527 (0) 09054
0,09054 (0) 18108
0,18108 (0) 36216
0,36216 (0) 72432
0,72432 (1) 44864
0,44864 (0) 89728
0,89728 (1) 79456

-1-2-3-4-5-6-7
0,0000101
1.2⁻⁵ + 1.2⁻⁷ =
0,03125 + 0,0078125

c) $(10,07) \cdot 1,2^{-4} = 0,0625 \quad \times 2$

1010,0001000

0 1010,0001000

10,0625

0,07

0,14

0,28

0,56

0,12

0,24

0,48

0,14

0,28

0,56

1,12

0,24

0,48

0,96

5- a) $0,098 - 0,09375 = 0,00425$
 O erro da a da 4 é de 0,00425

b) $0,04597 - 0,0390625 = 0,0062075$
 O erro da b da 4 é de 0,0062075

c) $0,07 - 0,0625 = 0,0075$
 O erro da c da 4 é de 0,0075

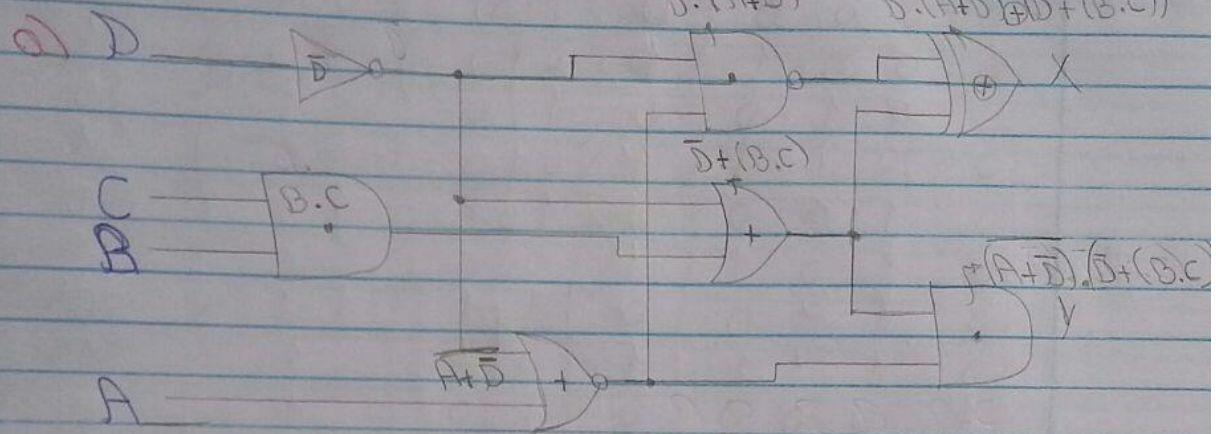
6- A figura apresenta o diagrama de blocos de câmera fotográfica acionada por um controle digital, o qual funciona de acordo com a descrição dada logo abaixo.

F	C	B	P	Obt	Fls
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	0	0	0
0	0	1	1	0	0
0	1	0	0	0	0
0	1	0	1	0	0
0	1	1	0	0	0
0	1	1	1	0	1
1	0	0	0	0	0
1	0	0	1	0	0
1	0	1	0	1	0
1	0	1	1	0	0
1	1	0	0	0	0
1	1	0	1	0	0
1	1	1	0	0	0
1	1	1	1	0	0
1	1	1	1	0	0

$$\text{Obt} \\ S = F \cdot \bar{C} \cdot B \cdot \bar{P}$$

$$\text{Fls} \\ S = \bar{F} \cdot C \cdot B \cdot \bar{P}$$

7- Descreva a tabela verdade e a expressão algébrica dos circuitos abaixo:



$$X = \bar{D} \cdot (A + \bar{D}) \oplus (\bar{D} + (B \cdot C))$$

$$Y = (A + \bar{D}) \cdot (\bar{D} + (B \cdot C))$$

Tabela Verdade
Próxima página

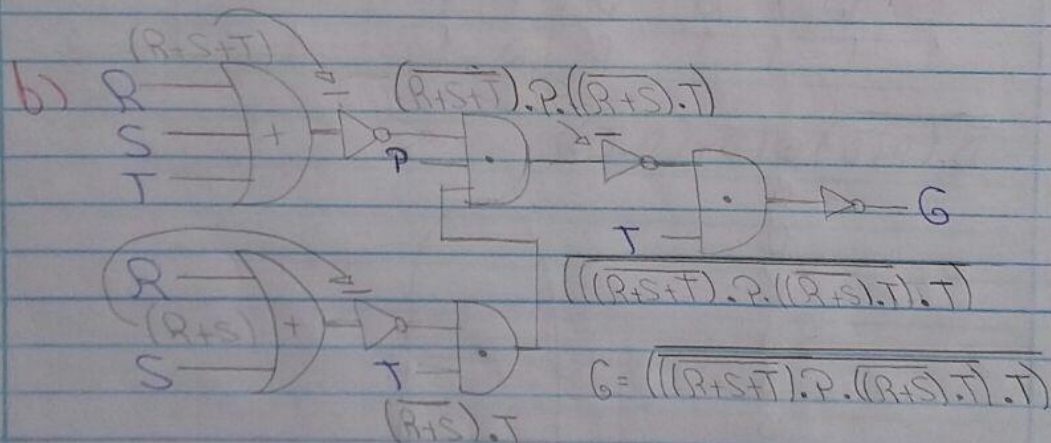


Tabela Verdade próximas páginas

7-a) y

A	B	C	D	\bar{D}	$A + \bar{D}$	$B \cdot C$	$\bar{D} + (B \cdot C)$
0	0	0	1	0	1	0	0
0	0	1	0	1	0	0	1
0	0	1	1	0	1	0	0
0	1	0	0	1	0	0	1
0	1	0	1	0	1	0	0
0	1	1	0	1	0	1	1
0	1	1	1	0	1	1	1
1	0	0	0	1	0	0	1
1	0	0	1	0	0	0	0
1	0	1	0	1	0	0	1
1	0	1	1	0	0	0	0
1	1	0	0	1	0	0	1
1	1	0	1	0	0	0	0
1	1	1	0	1	0	1	1
1	1	1	1	0	0	1	1

$$(\overline{A + \bar{D}}) \cdot (\bar{D} + (B \cdot C))$$

0
0
0
0
0
0
0
1
0
0
0
0
0
0
0
0

7-a) X

A	B	C	D	$A + \bar{D}$	\bar{D}	B.C	$\bar{D} + (B.C)$	$\bar{D} \cdot (A + \bar{D})$
0	0	0	0	0	1	0	1	0
0	0	0	1	1	0	0	0	1
0	0	1	0	0	1	0	1	0
0	0	1	1	1	0	0	0	1
0	1	0	0	0	1	0	1	0
0	1	0	1	1	0	0	0	1
0	1	1	0	0	1	1	1	0
0	1	1	1	1	0	1	1	1
1	0	0	0	0	1	0	1	0
1	0	0	1	0	0	0	0	0
1	0	1	0	0	1	0	1	0
1	0	1	1	0	0	0	0	0
1	1	0	0	0	1	0	1	0
1	1	0	1	0	0	0	0	0
1	1	1	0	0	1	1	1	0
1	1	1	1	0	0	1	1	0

$$\bar{D} \cdot (A + \bar{D}) \oplus (\bar{D} + (B.C))$$

0
0
0
0
0
0
0
0
0
0
1
0
1
0

[0]

