

Questão 1 - a.

a



b



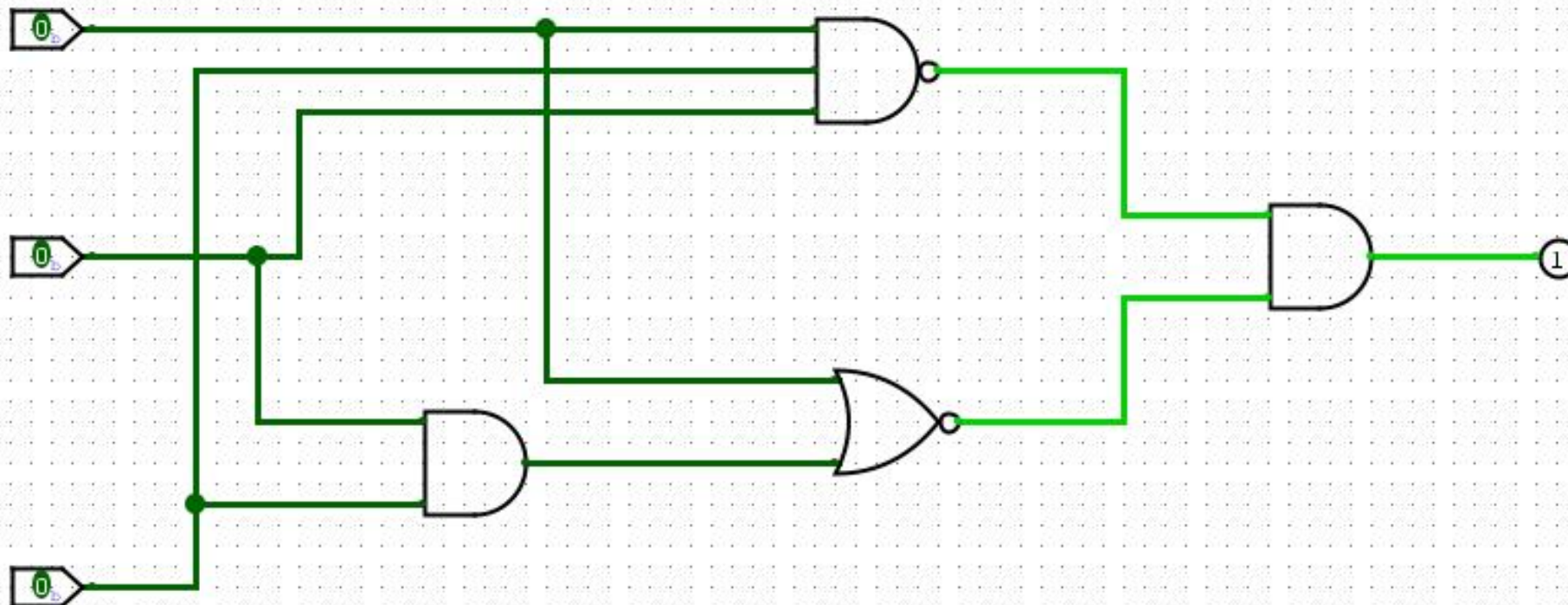
c

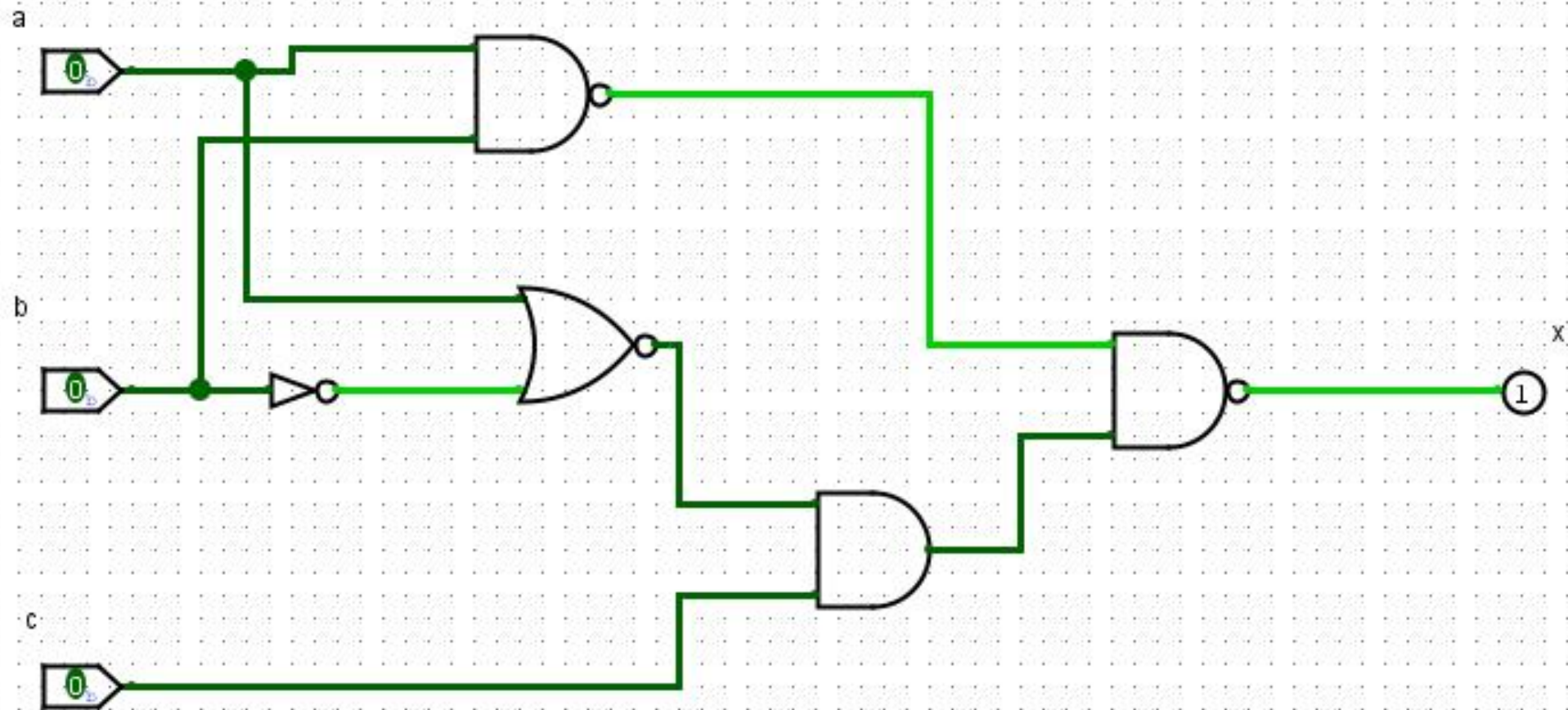


x

1

Questão 1-b





Questão 1 - c

a	b	c	x
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

Questão 2-a

a	b	c	x
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0

Questão 2 - b

a	b	c	x
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

Questão 2 - c

a	b	c	d	x
0	0	0	0	1
0	0	0	1	1
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

Questão 3 - a

a	b	c	d	x
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	0
1	1	1	1	0

Questão 3 - b

a	b	c	d	x
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	0
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Questão 3 - c

$$S=(a,b,c,d) = \text{sum}(m0, m1, m5, m6, m8, m9, m12, m13, m14))$$

	Minitermo		
0	'a . 'b . 'c . 'd		
1	'a . 'b . 'c . d		
5	'a . b . 'c . d		
6	'a . b . c . 'd		
8	a . 'b . 'c . 'd		
9	a . 'b . 'c . d		
12	a . b . 'c . 'd		' negado
13	a . b . 'c . d		
14	a . b . c . 'd		

Questão 4 - a

$$S = (a,b,c,d) = \text{sum}(m4, m5, m6, m7, m8, m9, m10, m11, m12, m13)$$

	Minitermo		
4	'a . b . 'c . 'd		
5	'a . b . 'c . d		
6	'a . b . c . 'd		
7	'a . b . c . d		
8	a . 'b . 'c . 'd		
9	a . 'b . 'c . d		
10	a . 'b . c . 'd		' negado
11	a . b . 'c . d		
12	a . b . 'c . 'd		
13	a . b . 'c . d		

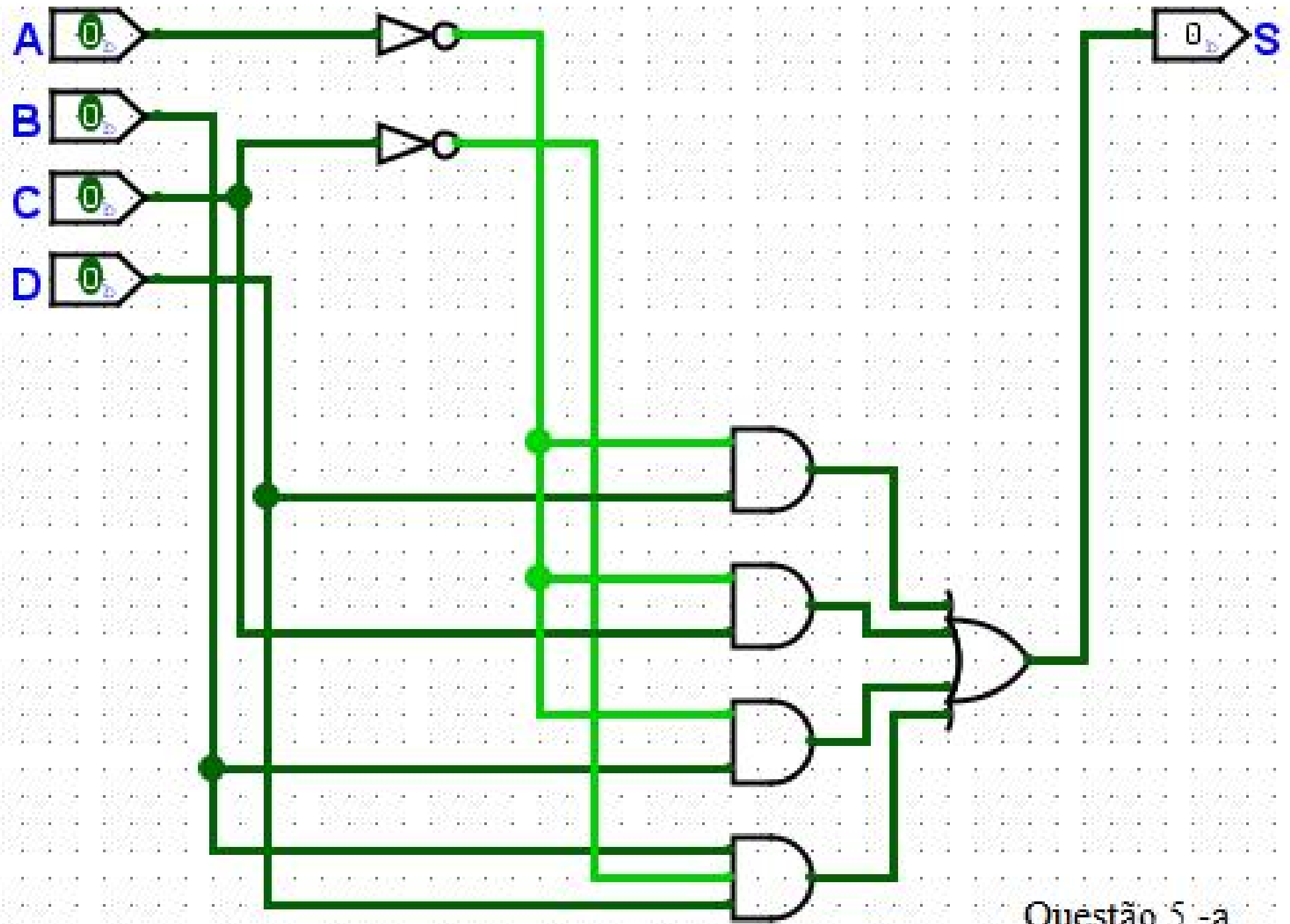
$S = (a, b, c, d = \text{sum}(m_0, m_1, m_2, m_3, m_4, m_5, m_6, m_7, m_8, m_9, m_{10}, m_{12}, m_{13}, m_{14}, m_{15}))$

	Minitermo		
0	'a . 'b . 'c . 'd		
1	'a . 'b . 'c . d		
2	'a . 'b . c . 'd		
3	'a . 'b . c . d		
4	'a . b . c . d		
5	'a . b . 'c . d		
6	'a . b . c . 'd		' negado
7	a . b . c . d		
8	a . 'b . 'c . 'd		
9	a . 'b . 'c . d		
10	a . 'b . c . 'd		
12	a . b . 'c . 'd		
13	a . b . 'c . d		
14	a . b . c . 'd		
15	a . b . c . d		
16	a . b . c . d		

Questão 4 - c

	Minitermo		
1	'a . 'b . 'c . d		
2	'a . 'b . c . 'd		
3	'a . 'b . c . d		
4	'a . b . 'c . 'd		
5	'a . b . 'c . d		
6	'a . b . c . 'd		
7	'a . b . c . d		' negado
13	'a . 'b . c . 'd		

Questão 5 - a



Questão 5 -a

Maxtermo

0 $a + b + c + d$

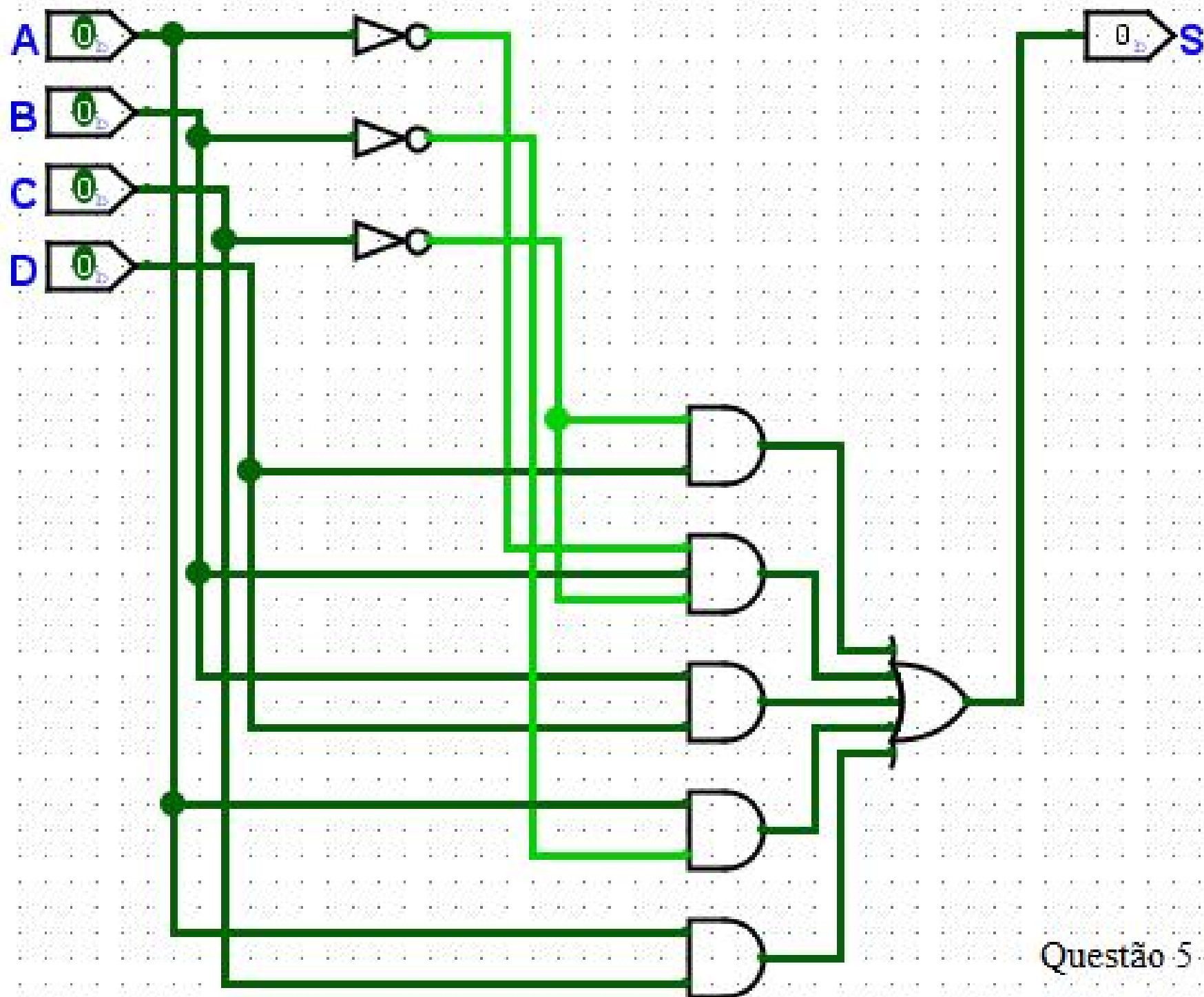
2 $a + b + c + d$

3 $a + b + c + d$

6 $a + b + c + d$

12 $a + b + c + d$

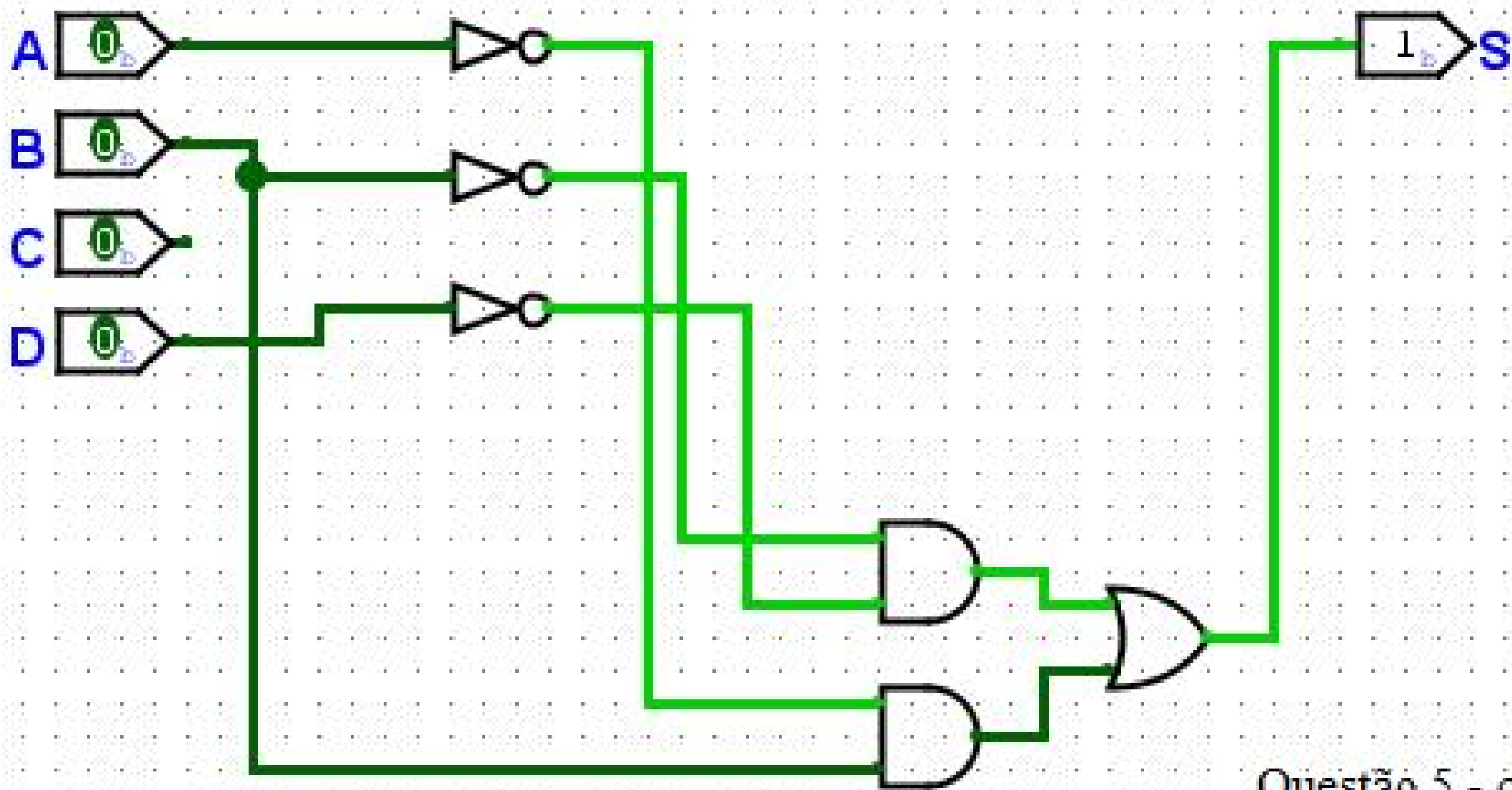
Questão 5 - b



Questão 5 - b

	Minitermo		
0	'a . 'b . 'c . 'd		
2	'a . 'b . c . 'd		
4	'a . b . 'c . 'd		
5	'a . b . 'c . d		
6	'a . b . c . d		
7	'a . b . c . d		
8	a . 'b . 'c . 'd		' negado
10	'a . b . 'c . d		

Questão 5 - c



Questão 5 - c

Saída:

$$\overline{\overline{a} \overline{a} b} \overline{\overline{a} b b}$$

Saída:

$$\overline{\overline{a} b b} + \overline{b} + b$$

Tabela verdade

a	b	x	y
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

Questão 6 - a

$$\overline{\overline{c} + \overline{b} + \overline{a} + a \wedge c} a + (a b + b) c$$

Tabela verdade

a	b	c	x
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

**Questão
6-b**