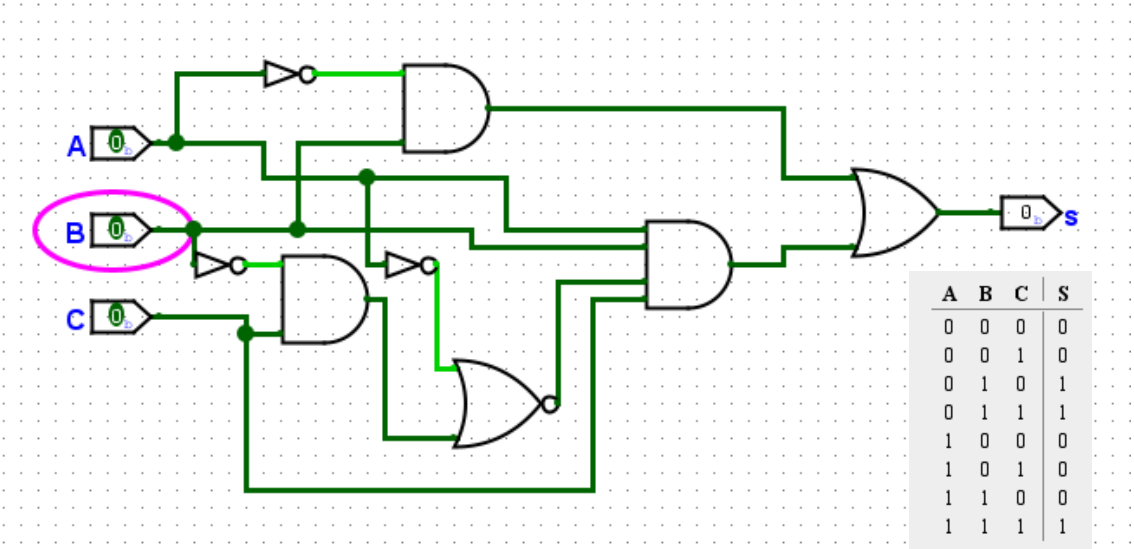
**Lista de Exercícios – Circuitos Digitais**

**Andrew Gabriel Gomes – CC – 2ªFase**

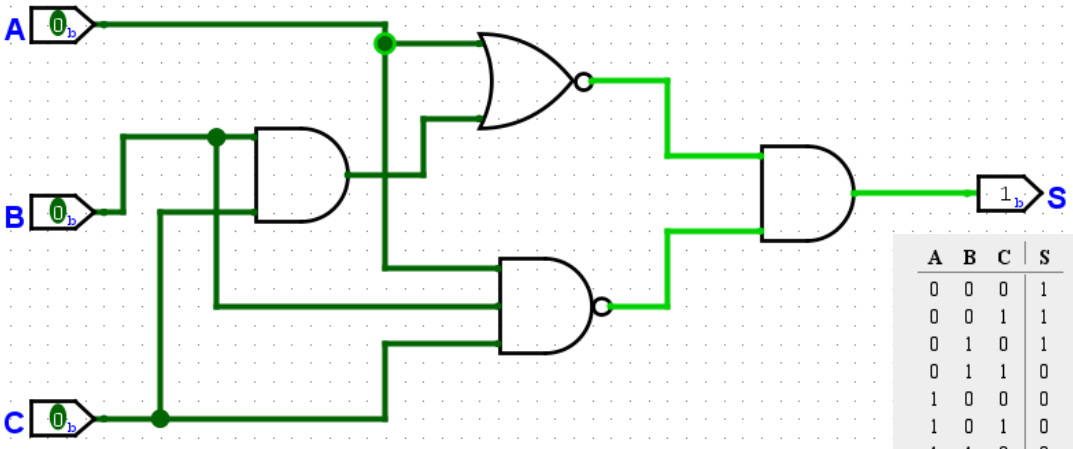
**1 e 2)**

**a)**



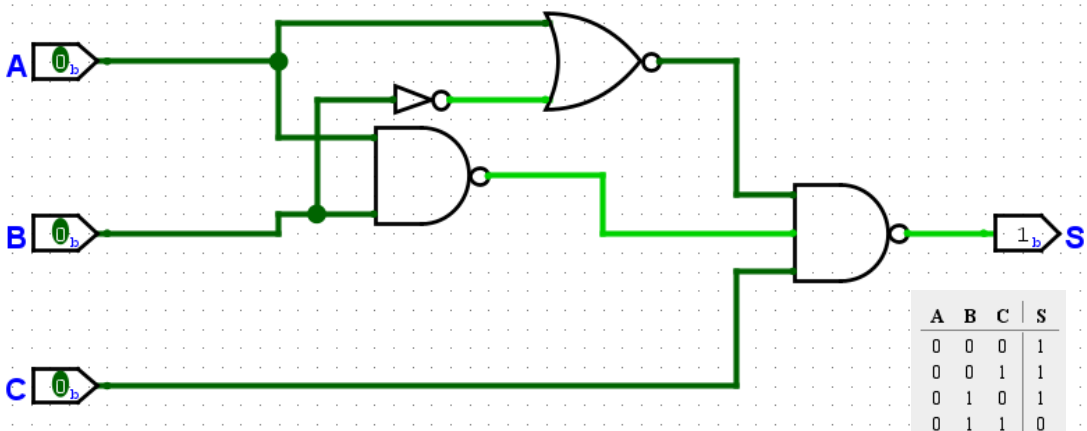

| A | B | C | S |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

**b)**




| A | B | C | S |
|---|---|---|---|
| 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 |

**C)**




| A | B | C | S |
|---|---|---|---|
| 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 |

**3 e 4)** A-

| A | B | C | D | S |
|---|---|---|---|---|
| 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 |

**S(A,B,C,D) = ∑m(0,1,5,6,8,9,12,13,14)**

**m0 = (A'.B'.C'.D')**

**m1 = (A'.B'.C'.D)**

**m5 = (A'.B.C'.D)**

**m6 = (A'.B.C.D')**

**m8 = (A.B'.C'.D')**

**m9 = (A.B'.C'.D)**

**m12 = (A.B.C'.D')**

**m13 = (A.B.C'.D)**

**m14 = (A.B.C.D')**

B-

| A | B | C | S |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

**S(A,B,C) = ∑m(2,3,4,5,6)**

**m2 = (A'.B.C')**

**m3 = (A'.B.C)**

**m4 = (A.B'.C')**

**m5 = (A.B'.C.)**

**m6 = (A.B.C')**

C-

| A | B | C | D | S |
|---|---|---|---|---|
| 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 | 1 |
| 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 |

**S(A,B,C,D) = ∑m(0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15)**

**m0 = (A'.B'.C'.D')**

**m1 = (A'.B'.C'.D)**

**m2 = (A'.B'.C.D')**

**m3 = (A'.B'.C.D)**

**m4 = (A'.B.C'.D')**

**m5 = (A'.B.C'.D)**

**m6 = (A'.B.C.D')**

**m7 = (A'.B.C.D)**

**m8 = (A.B'.C'.D')**

**m9 = (A.B'.C'.D)**

**m10 = (A.B'.C.D')**

**m11 = (A.B'.C.D)**

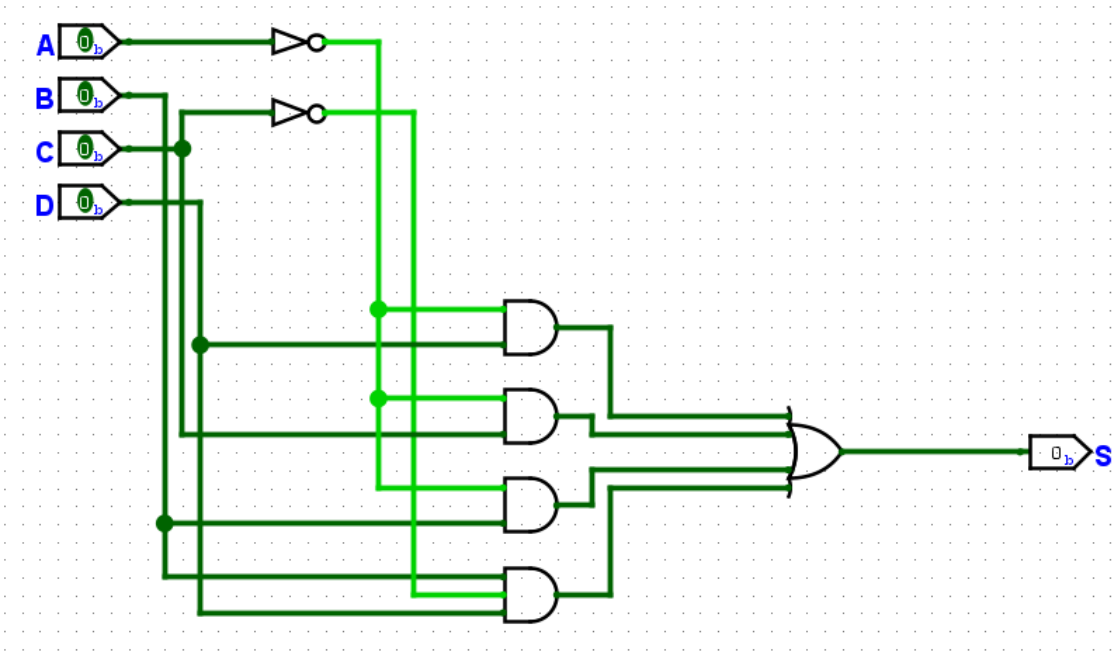
**m12 = (A.B.C'.D')**

**m13 = (A.B.C'.D)**

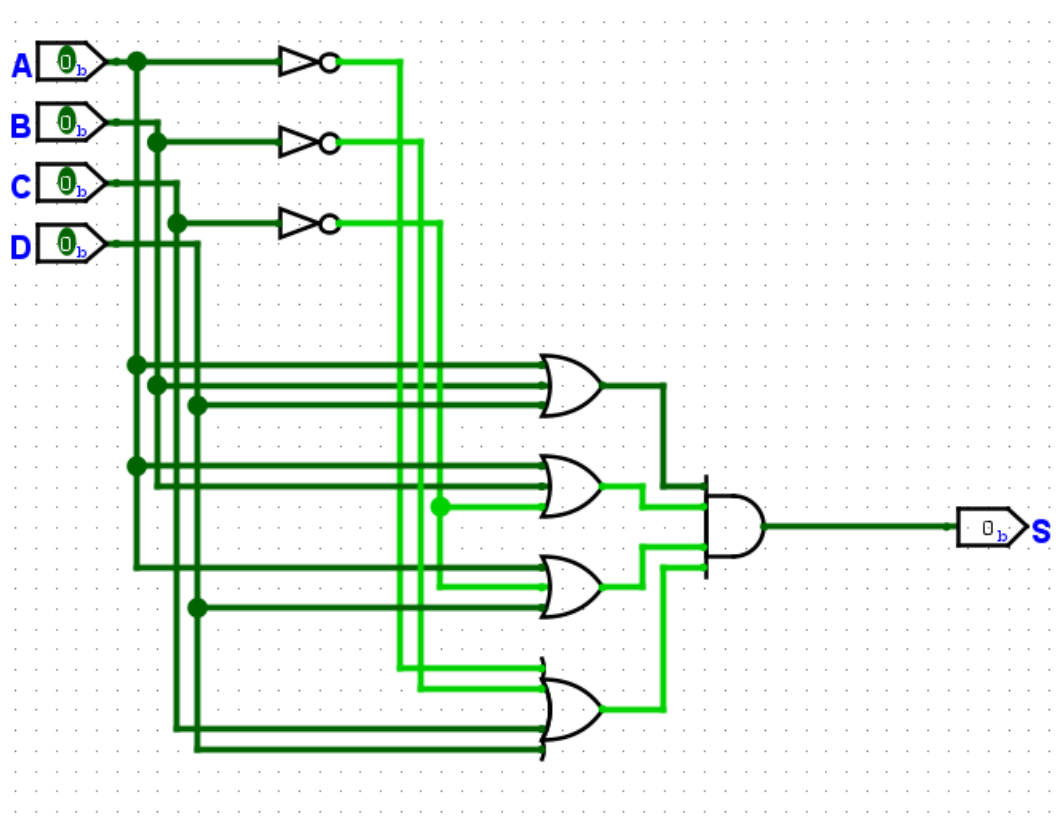
**m14 = (A.B.C.D')**

**m15 = (A.B.C.D)**

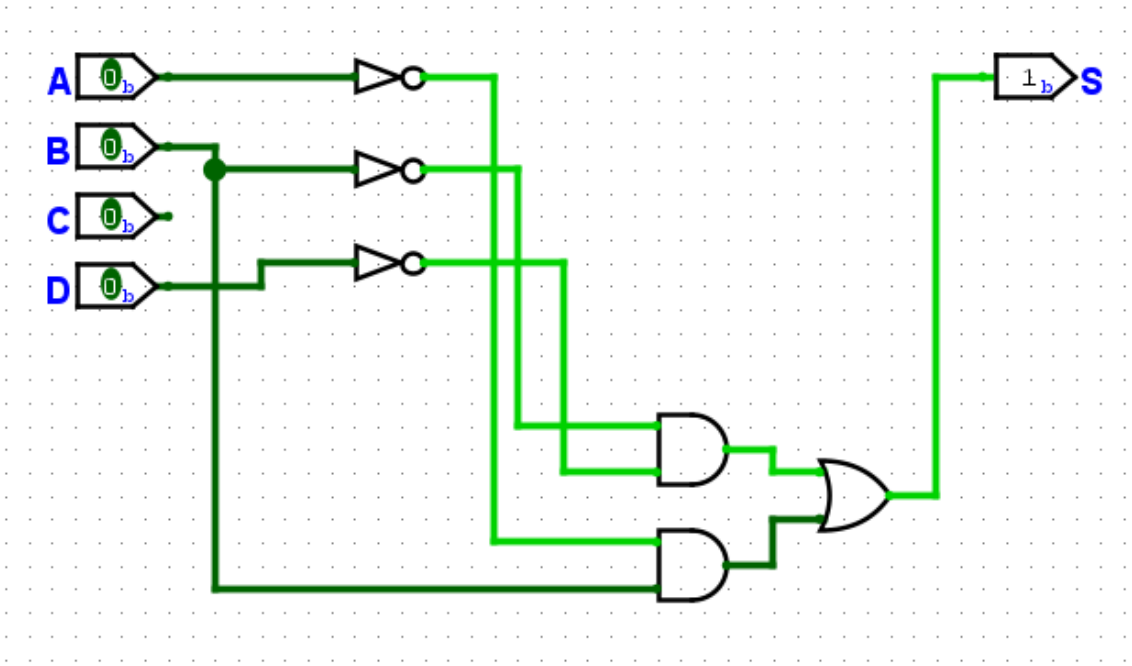
5) **a**




**b)**



C)




6) A)

| A | B | F | G |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |

**Expressões de saída**

$F = \overline{A} \cdot B + A \cdot \overline{B}$

$G = \overline{A} \cdot B$

B)

| A | B | C | F |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

$F = \overline{A} \cdot \overline{C} + A \cdot B + A \cdot \overline{C}$