

QUARTA LISTA DE EXERCÍCIOS DE INTRODUÇÃO À COMPUTAÇÃO

- 1) Simplifique as expressões booleanas abaixo, dado que $(A \oplus B) = A'B + AB'$:
- $S = (AB)' + A'B + AC' + A'BC'$
 - $S = (A' + B' + C')(B' \cdot C)(A' + C')$
 - $S = ABC\bar{C} + (A \oplus B) \cdot \bar{C} + BC + \bar{C}$
 - $S = A + \left[\overline{(B \oplus C)} + \bar{B} + A\bar{C} + \overline{ABC} \right]$
 - $S = A + \overline{AB} + \overline{(A + B)}C + \overline{(A + B + C)}D$
 - $S = A'B'C' + A'BC + A'BC' + AB'C' + ABC'$
 - $S = ((B' + C' + D')'(A' + B + C)' + C)' + A'B'C + B'(A + C)'$
 - $S = A[B'(C + D)' + A'(B + C)']' + CD' + AB'C + AB$
 - $S = ABC + A'C$
 - $S = (Q + R)(Q' + R')$
 - $S = ABC + AB'C + A'$
 - $S = (RST)'(R + S + T)'$
 - $S = (C + D)' + A'CD' + AB'C' + A'B'CD + ACD'$
 - $S = AB'C' + A'B'C + ABC + A'BC + A'BC'$
 - $S = A'B'C' + A'BC + ABC + AB'C' + AB'C$
 - $S = ABC'D + A'B'CD' + ABC'D' + A'BCD' + ABCD' + AB'CD' + ABCD$
 - $S = [(B + CD' + D' + AC)'(A + B' + C') + B'(C + A'BC + AC)']'(A + B)$
 - $S = (A' + B)\{B' + (B \oplus C)[A'BC' + B(A + D)'] + BC' + B'D\} + ABD$
 - $S = (A \oplus B + B'CD')[D' + B'C + D(A' + B)'] + A'D'$

2) Simplifique as expressões:

$$S1 = (A + B + C) \cdot (\bar{A} + \bar{B} + C)$$

$$S2 = \overline{(AC + B + D)} + C \cdot \overline{(ACD)}$$

$$S3 = \overline{[(A + B) \cdot C]} + \overline{[D(C + B)]}$$

$$S4 = (\bar{A} + \bar{B} + \bar{C}) \cdot (A + B + \bar{C})$$

$$S5 = \bar{A} \cdot \bar{B} \cdot C + \bar{A}BC + \bar{A}B\bar{C} + ABC + AB\bar{C}$$

$$S6 = \overline{\{[A(B + C)] \cdot D\}} \cdot \overline{(A + B)}$$