

11.c)

logičko koda 4

Projektovati DCVSL familiji LK koja realizuje sledeće funkcije i njihove komplemente:

a) $F = A \oplus B$

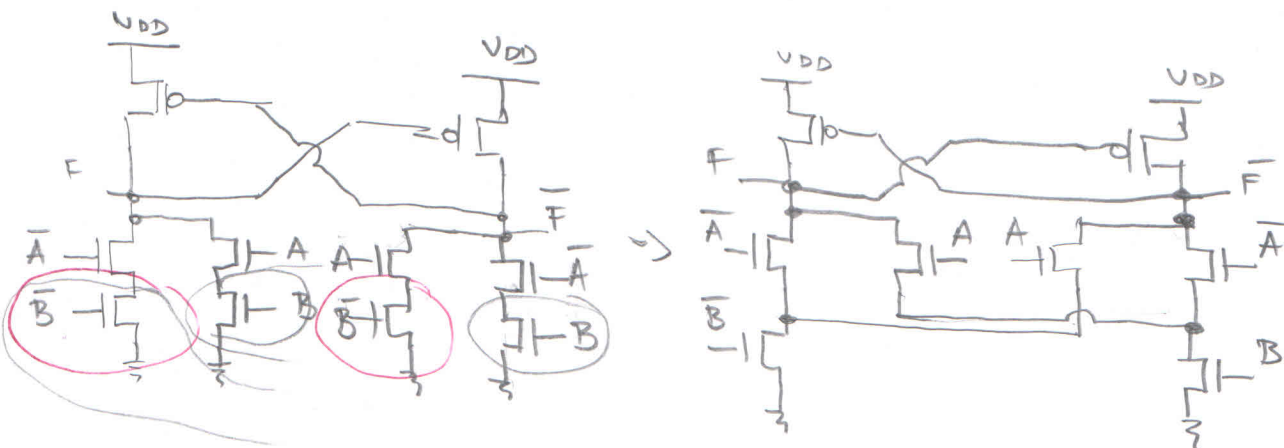
b) $F = AB + BC + AC$

c) $F = \bar{A}\bar{B}\bar{C} + AC + BC + CD$

Težiti da broj upotrebe kljenuh tranzistora bude minimalan.

a) $F = A \oplus B = A\bar{B} + \bar{A}B \Rightarrow \bar{F} = \overline{A\bar{B} + \bar{A}B}$

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



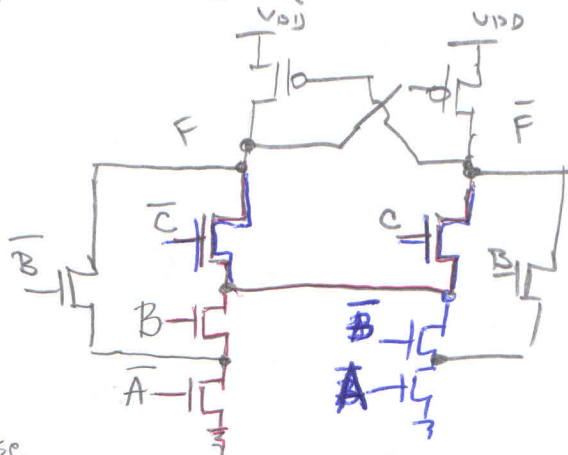
b) $F = AB + BC + AC = A(B+C) + BC = \overline{\overline{A(B+C) + BC}} = \overline{(\bar{A} + (\bar{B} \cdot \bar{C})) \cdot (\bar{B}\bar{C})} = \overline{\bar{A}\bar{B} + \bar{A}\bar{C} + \bar{B}\bar{C}} = \overline{\bar{A}(\bar{B} + \bar{C}) + \bar{B}\bar{C}}$

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

Tražim putanje oblika $X(Y + \bar{Y})$

Ali:

AB \ C	0	1
00	0	0
01	0	1
11	1	1
10	0	1



0 - putanje F do mase

1 - putanje \bar{F} do mase

c) $F = \bar{A}\bar{B}\bar{C}\bar{D} + Ae + Bc + cD$

10x2 + 2 → 22 tranzistora

CD \ AB	00	01	11	10
00	1	0	1	0
01	0	0	1	1
11	0	0	1	1
10	0	0	1	1

$C_1 \rightarrow F = C, \bar{F} = \bar{C}, A = 1$

Gledam gate mi je izlaz = nekome ulaznom signalu

