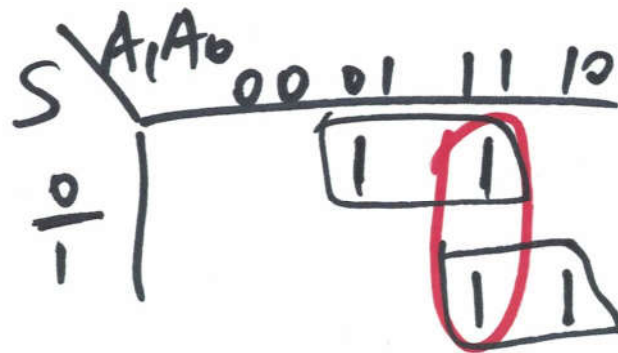
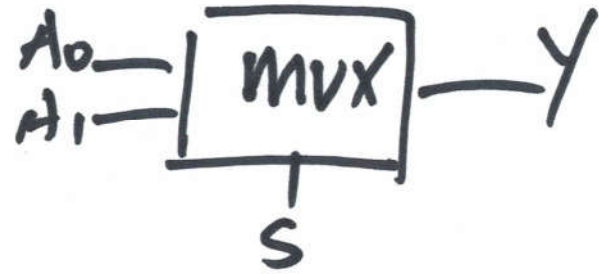


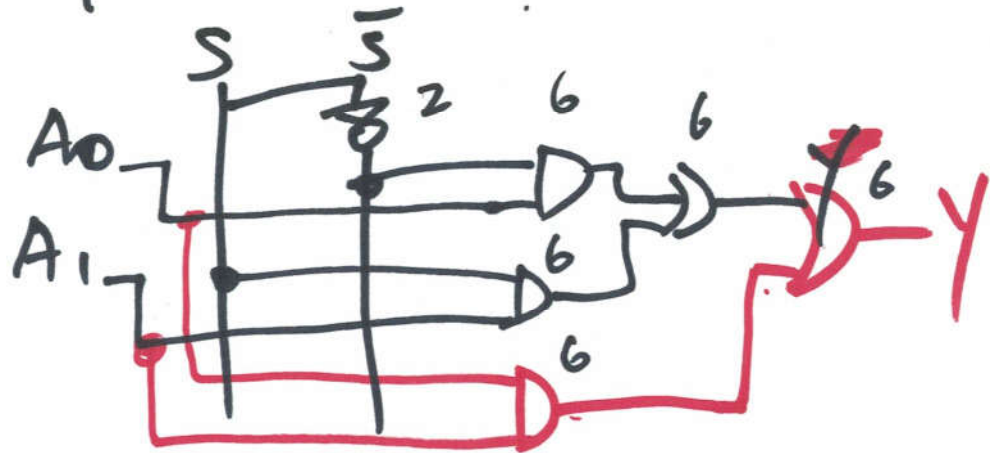
①

# 2-1 MUX

S	A <sub>1</sub>	A <sub>0</sub>	Y
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

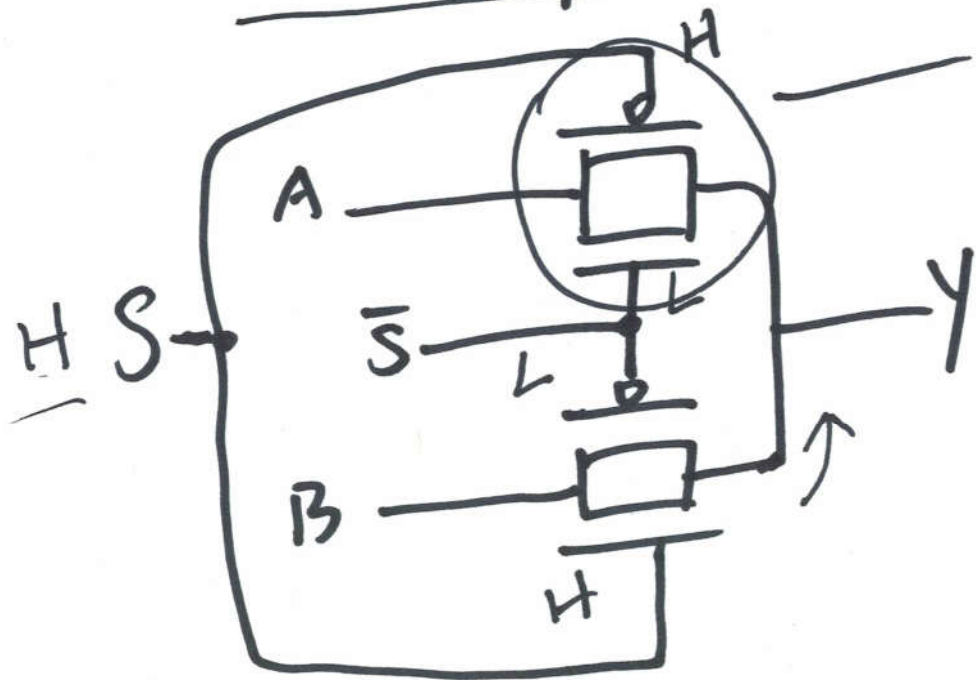


$$Y = \bar{S}A_0 + SA_1 + A_1A_0$$

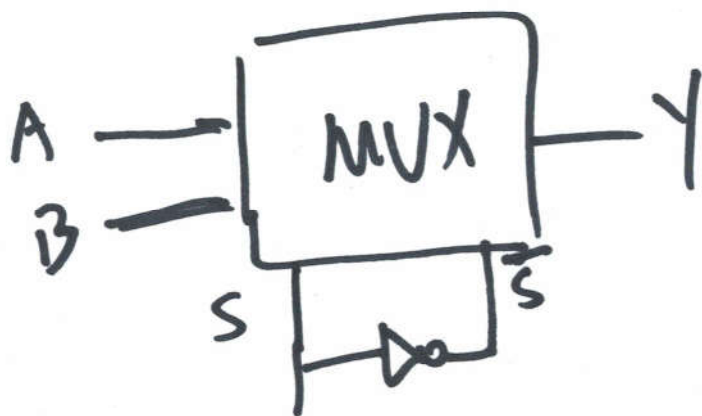
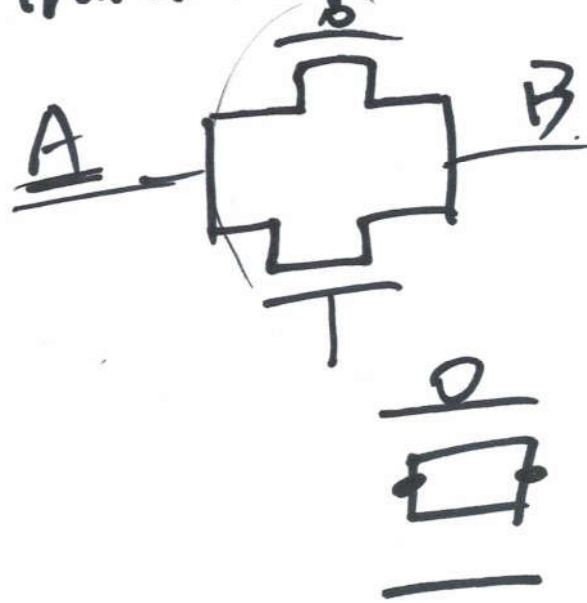


2

# An improved 2-1 MUX



TG: Transmission Gate



3



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

$$= (AB + \bar{A}\bar{B}) C_i + \bar{A} B \bar{C}_i + A \bar{B} \bar{C}_i$$

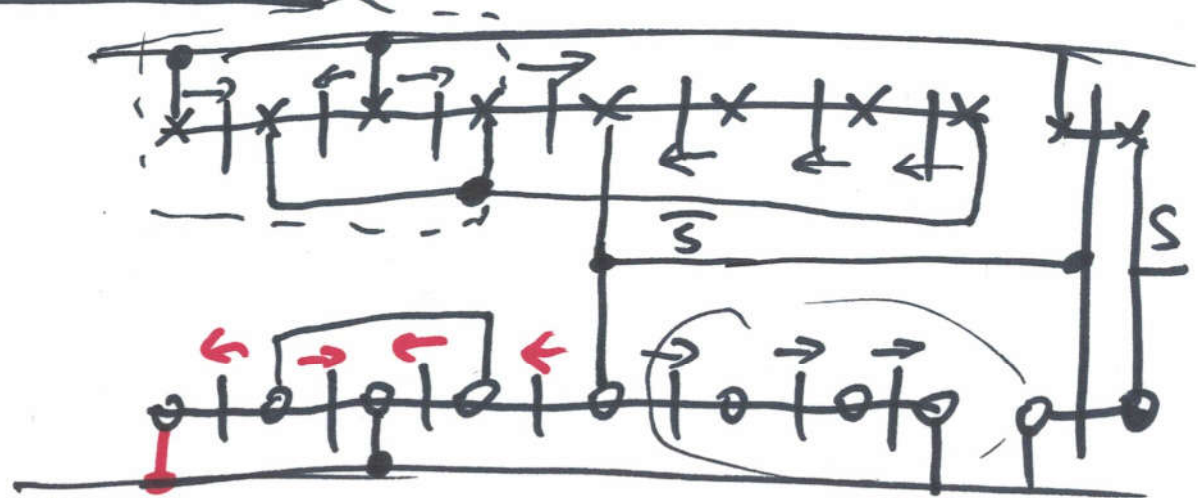
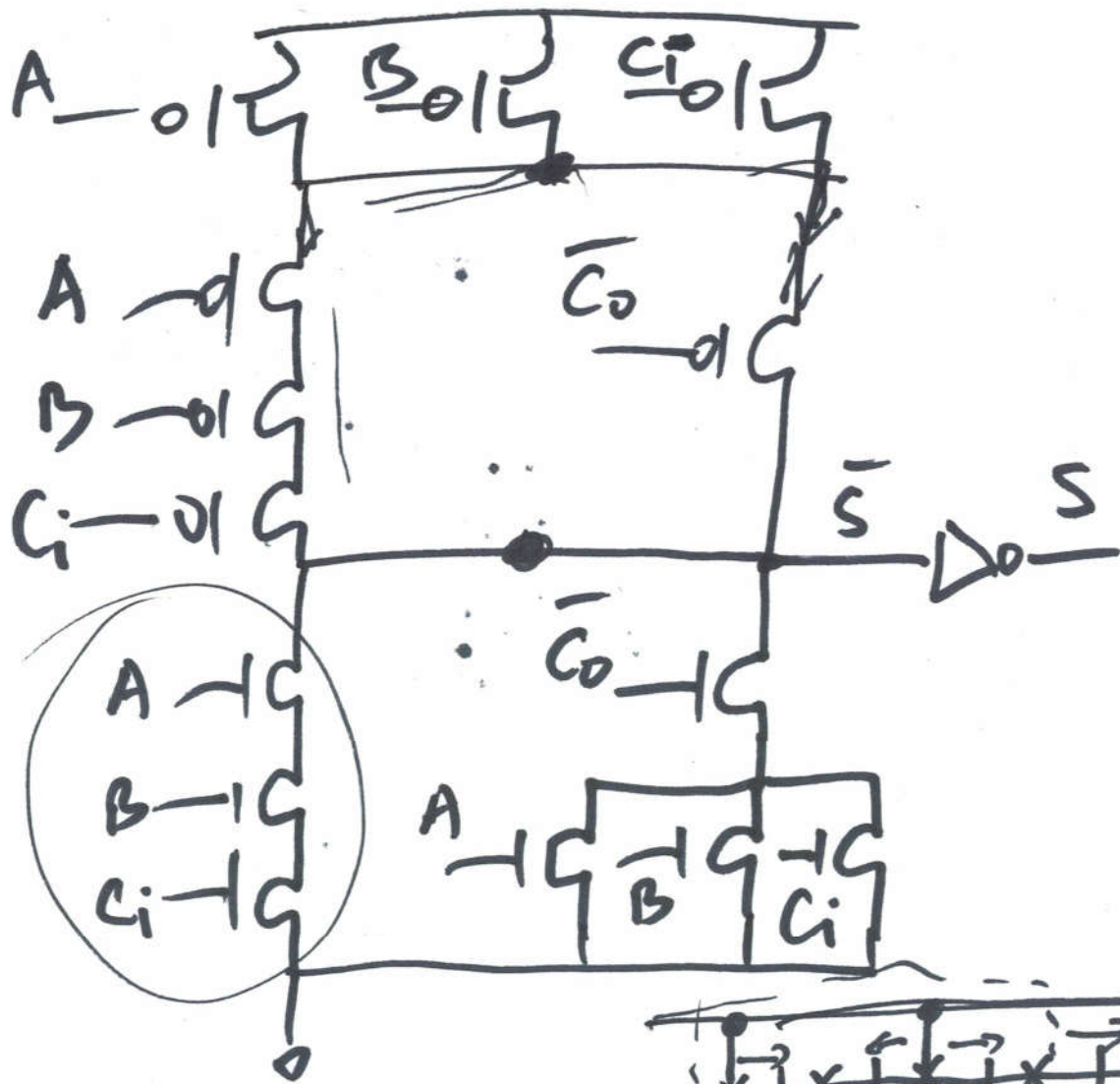
$$= \underline{ABC_i + \bar{A}\bar{B}C_i + \bar{A}B\bar{C}_i + A\bar{B}\bar{C}_i}$$

$$S = \underline{(A + B + C_i)} \cdot (\bar{A}\bar{B} + \bar{C}_i) \underline{(A + \bar{B})} + ABC_i$$

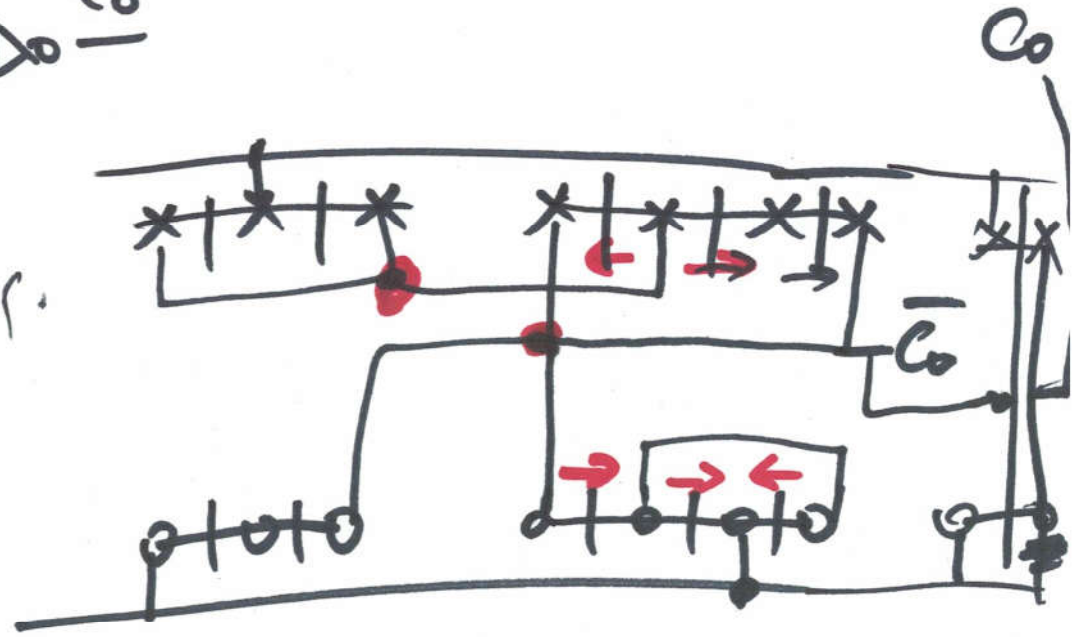
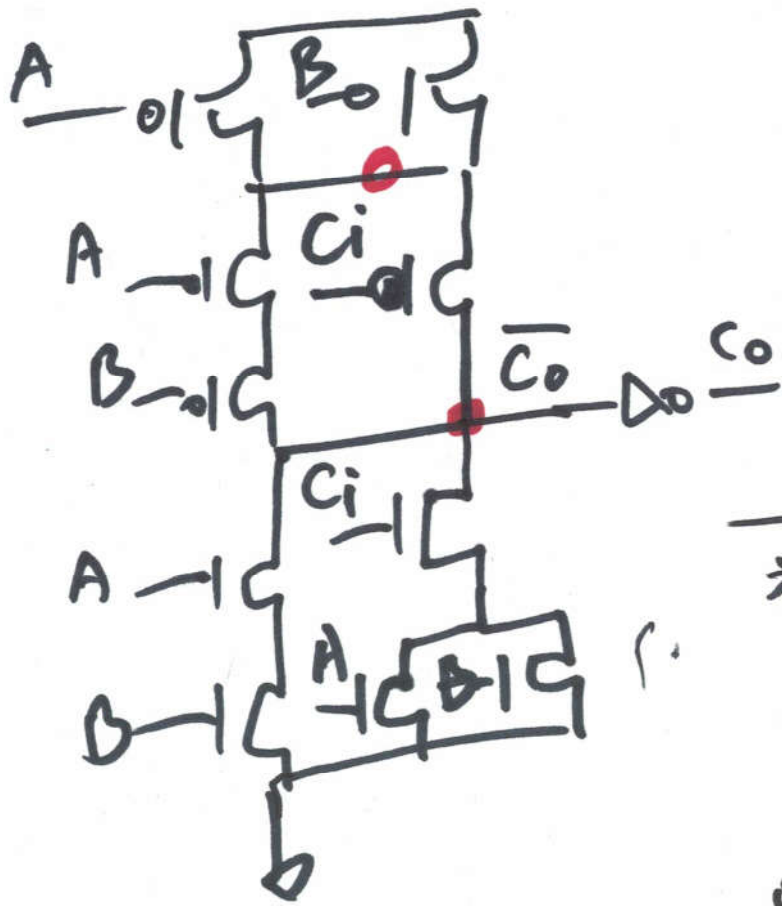
$$= (\underline{A\bar{B}} + \underline{\bar{A}B} + \underline{\bar{A}C_i} + \underline{\bar{B}C_i}) (\underline{\bar{A}\bar{B}} + \underline{\bar{C}_i}) + ABC_i$$

$$= \bar{A}\bar{B} + \bar{A}B C_i + A\bar{B}\bar{C}_i + \bar{A}B\bar{C}_i + \underline{ABC_i}$$

⑤

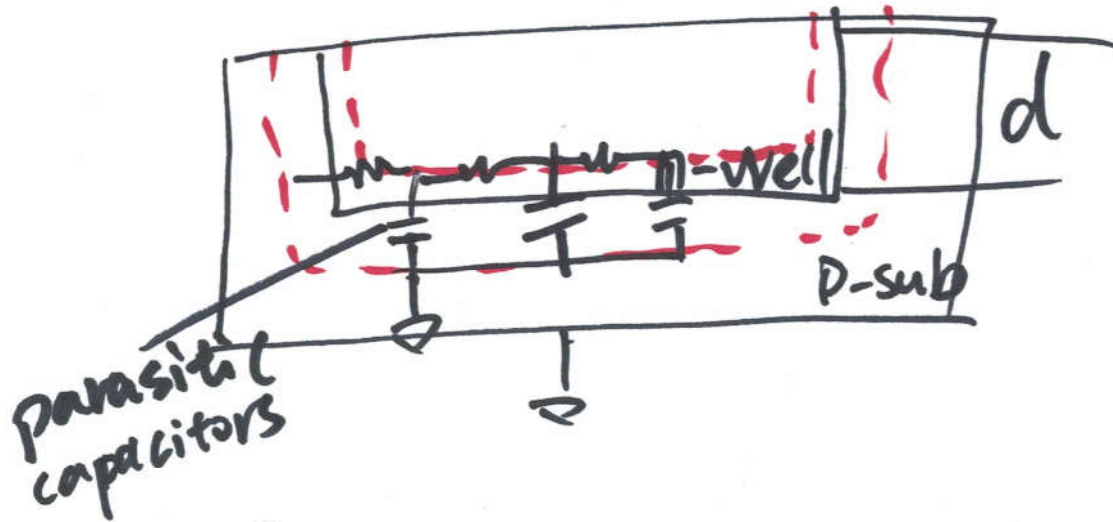


(b)



9

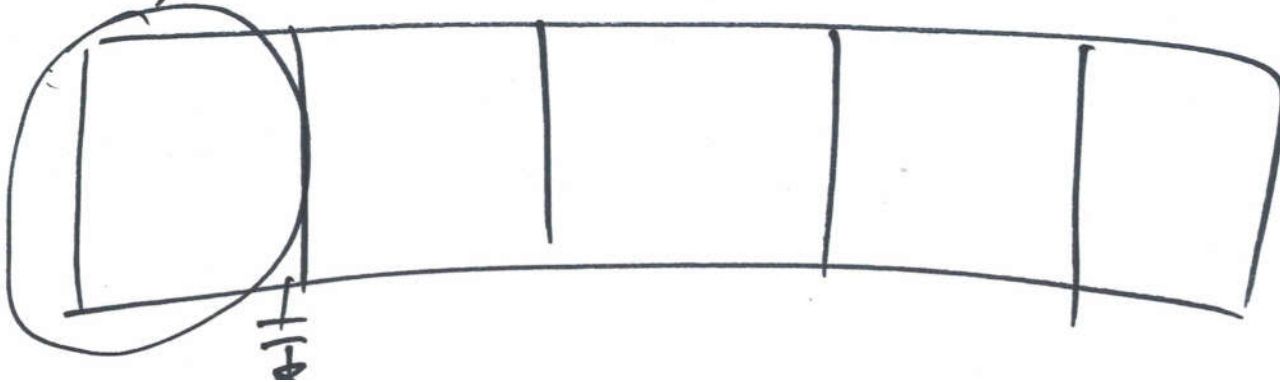
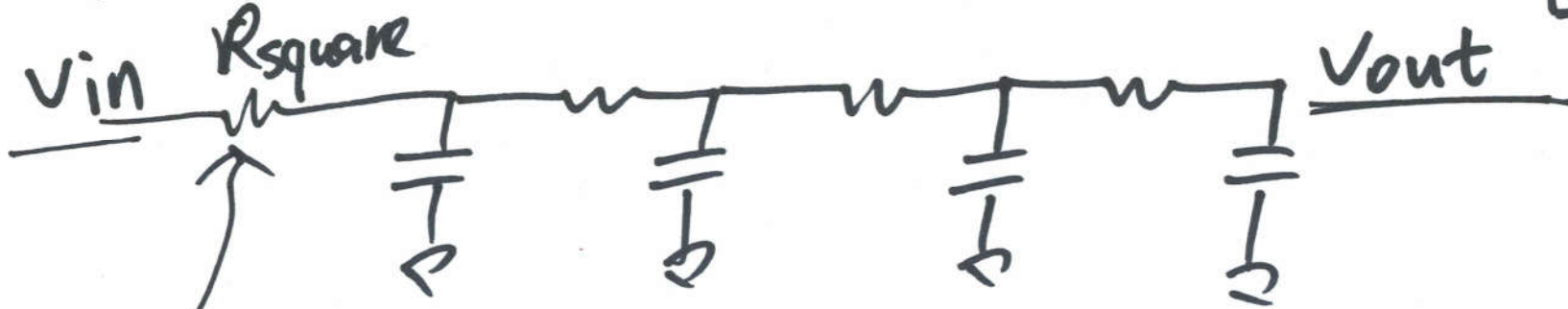
# C5 Layers



$$C = \epsilon \frac{A}{d} \downarrow$$

$$R = \rho \cdot \frac{L}{A} = \rho \frac{L}{w \cdot d} = \frac{\rho}{d} \cdot \frac{L}{w}$$

□ sheet resistance



(8)