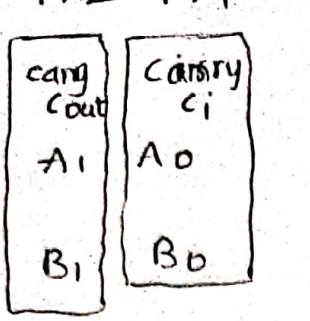
1)



$$\begin{array}{r} 10 \\ C_0\ 10 \\ \hline 1,0\ 0 \end{array}$$

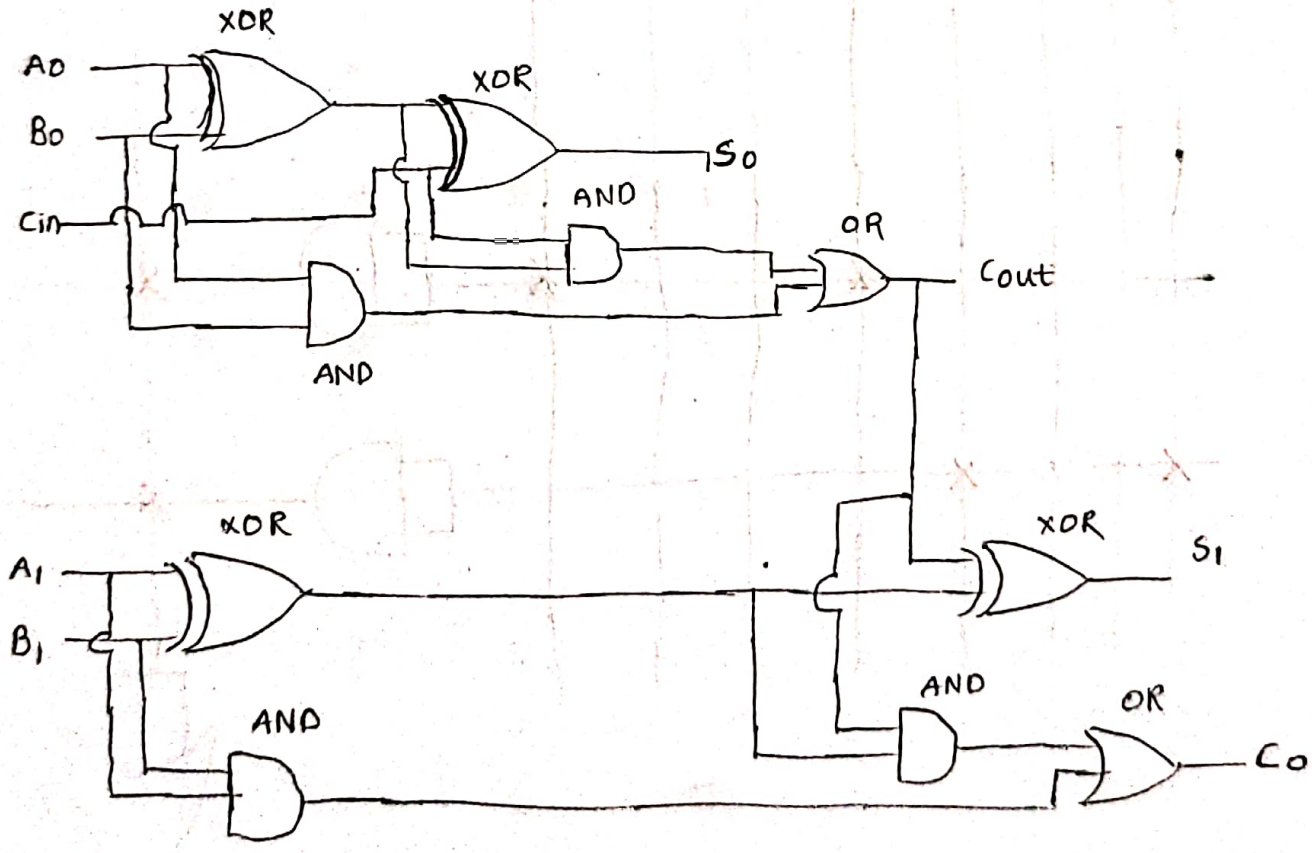
FA → 2HAS + 1 OR Gate

$S_0 = A_0 \oplus B_0 \oplus C_{in}$

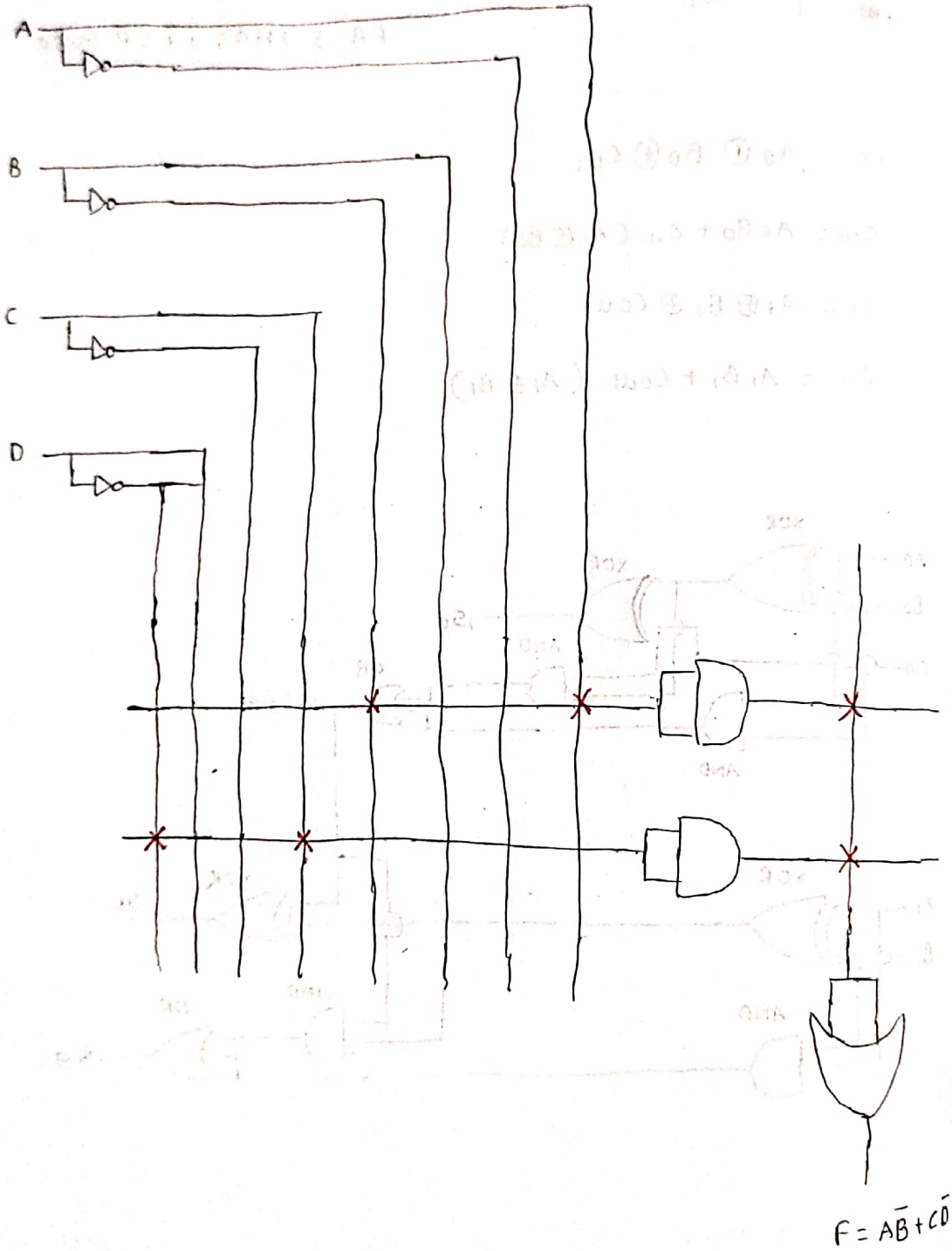
$C_{out} = A_0 B_0 + C_{in}(A_0 \oplus B_0)$

$S_1 = A_1 \oplus B_1 \oplus C_{out}$

$C_0 = A_1 B_1 + C_{out}(A_1 \oplus B_1)$



$A\bar{B} + C\bar{D}$



Ram contents

A	B	C	D	F
0	0	0	0	0
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	0	0	0	0
0	1	0	1	0
0	1	1	0	1
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	0
1	1	1	0	1
1	1	1	1	0