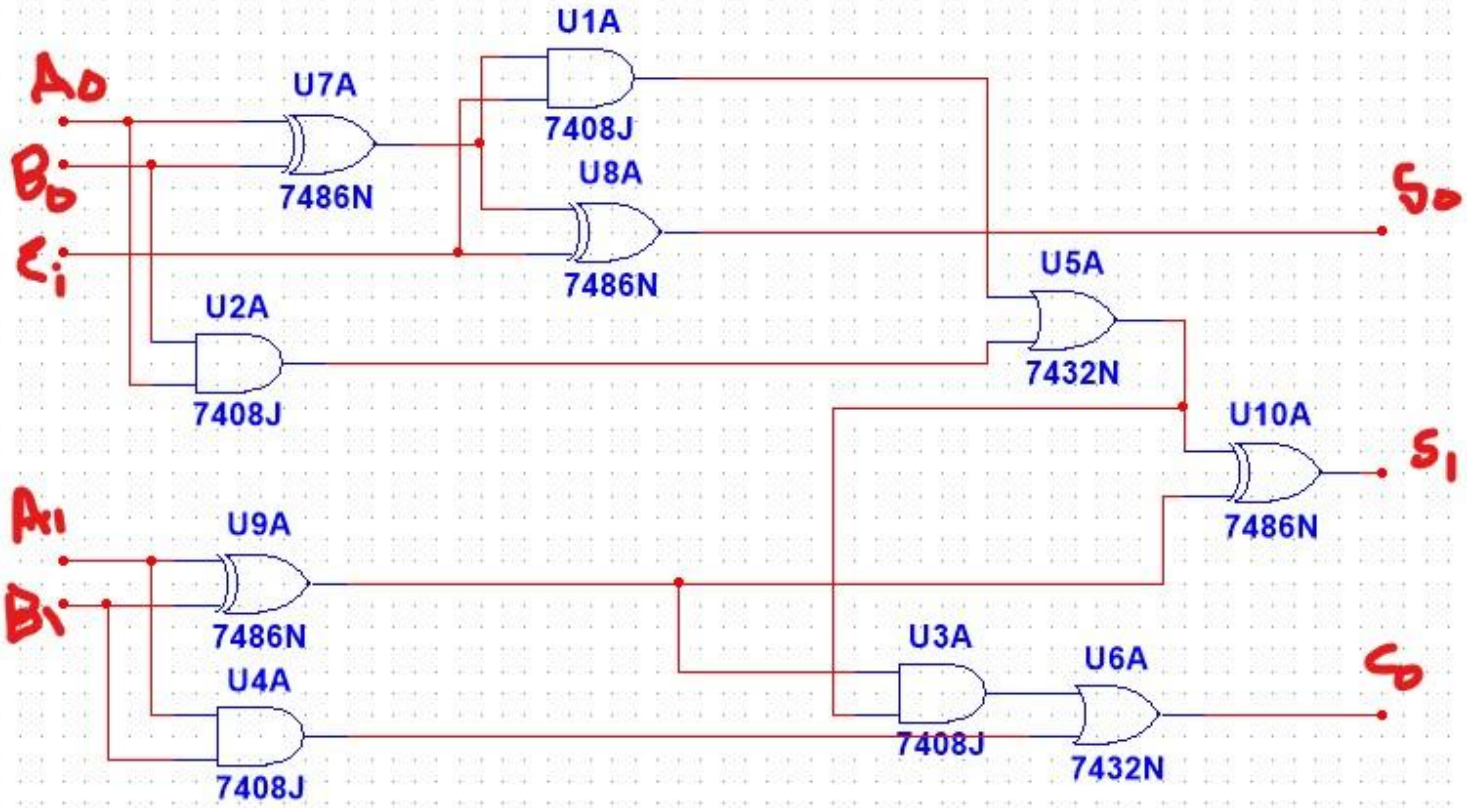
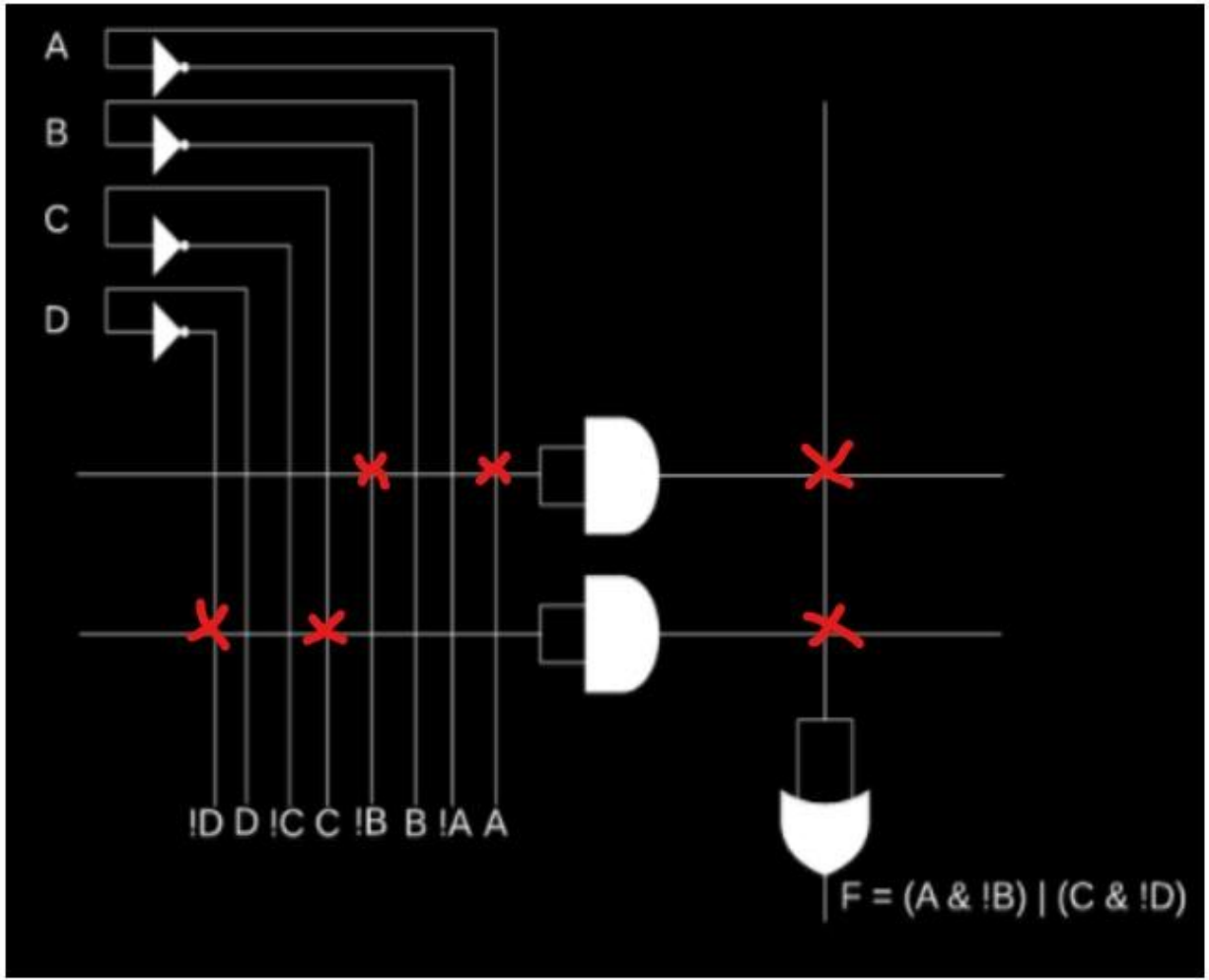
$So = Ao \oplus Bo \oplus Cin$

$S1 = A1 \oplus B1 \oplus Cout$

where, $Cout = AoBo + Cin(Ao \oplus Bo)$

$Co = A1B1 + Cout(A1 \oplus B1)$


A0
B0
Ci
U7A
7486N
U1A
7408J
U8A
7486N
S0
U2A
7408J
U5A
7432N
U10A
7486N
S1
A1
B1
U9A
7486N
U4A
7408J
U3A
7408J
U6A
7432N
C0


A
B
C
D
!D D !C C !B B !A A
F = (A & !B) | (C & !D)

$A \cdot B' + cD'$

RAM CONTENTS				
Address				Output Data
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	1	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

A is anded with B’ and C anded with D’ and product terms are ored together is the only possible solution