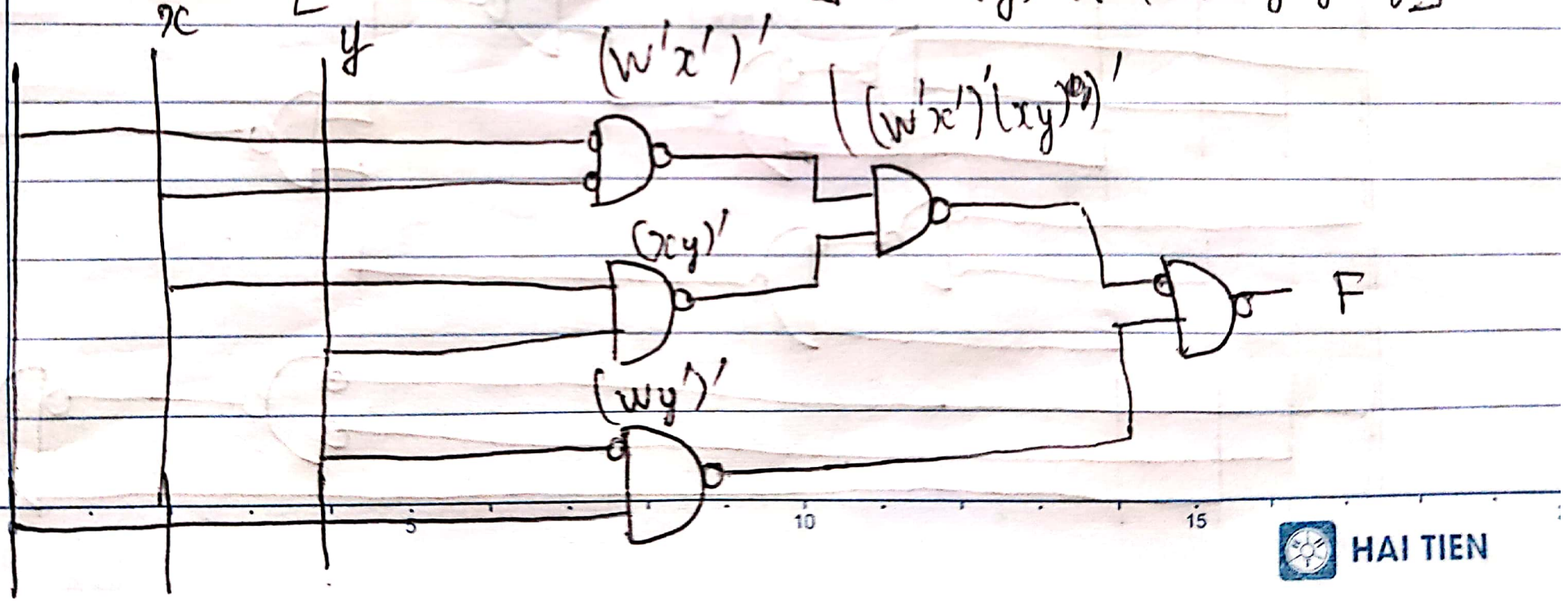
Assig 6 NAND 2 đầu vào

1. a) $F = w'x' + xy + wy'$

$= \left(\left(w'x' + xy + wy' \right)' \right)' = \left[(w'x')' \cdot (xy)' \cdot (wy')' \right]'$

$= \left[\left((w'x')' + (xy)' \right)' \cdot (wy')' \right]'$

$= \left[\left[(w \cdot w)' \cdot (x \cdot x)' \right]' \cdot (xy)' \cdot (w \cdot (y \cdot y)')' \right]'$

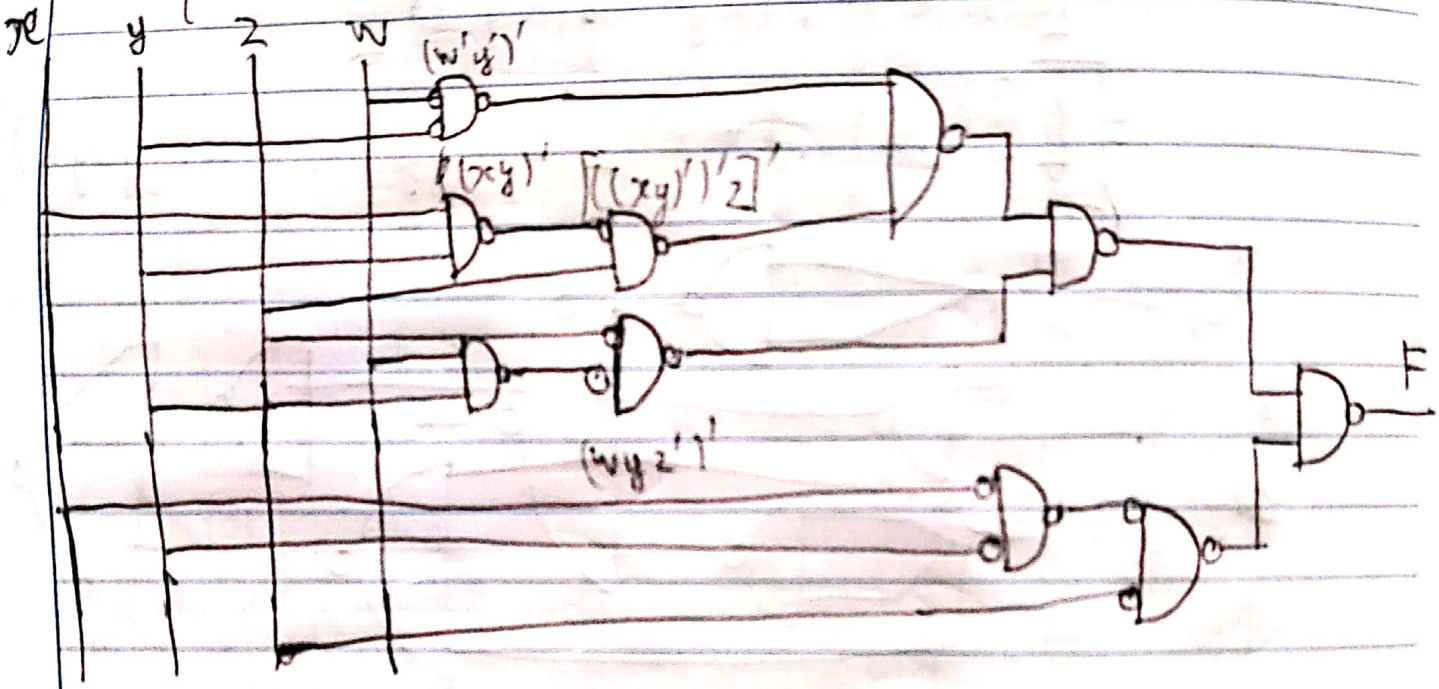


b) $F = w'y' + xyz + wyz' + x'y'z$

$= ((w'y' + xyz + wyz' + x'y'z)')'$

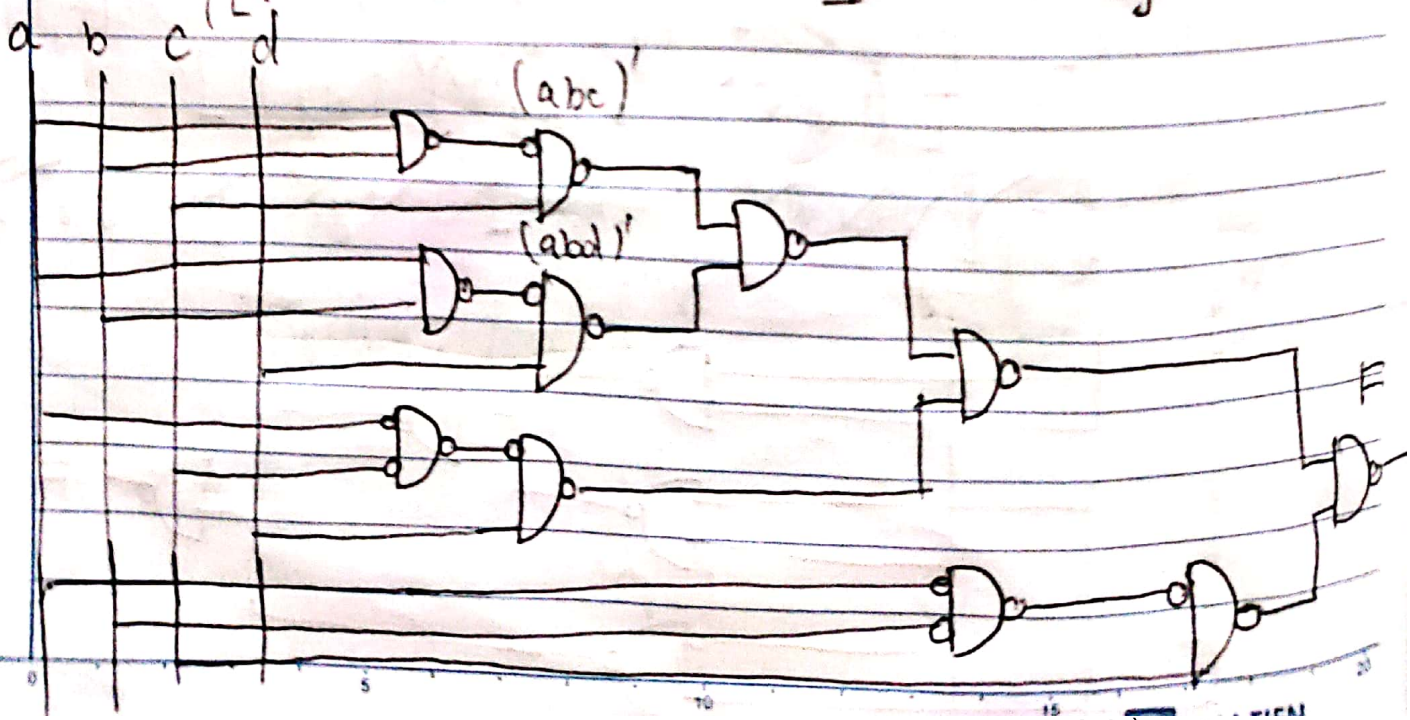
$= [(w'y')' . (xyz)' . (wyz')' . (x'y'z)']'$

$= \{[(w'y')' . (xyz)']' . (wyz')']' . (x'y'z')'\}'$



c) $F = abc + abd + a'c'd + a'b'c$

$= \{[(abc)' . (abd)']' [a'c'd]']' . (a'b'c)'\}'$



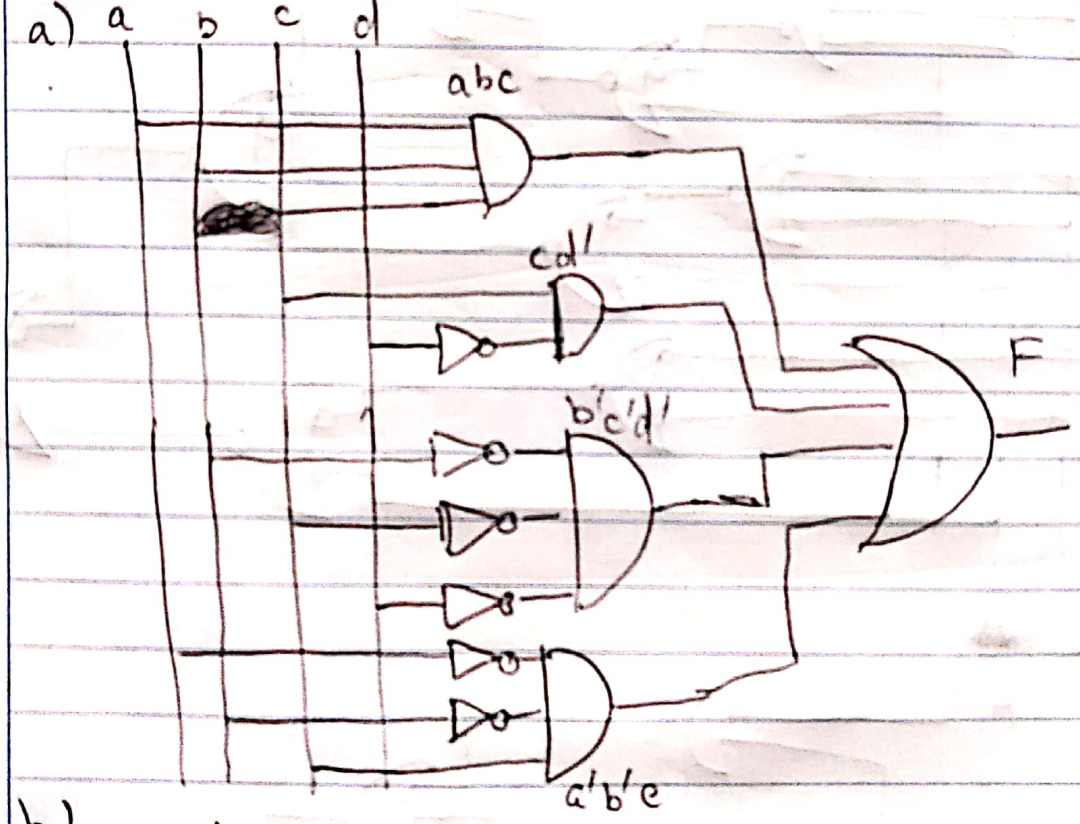
2. $F = \sum m(0,2,3,6,8,10,14,15)$

F

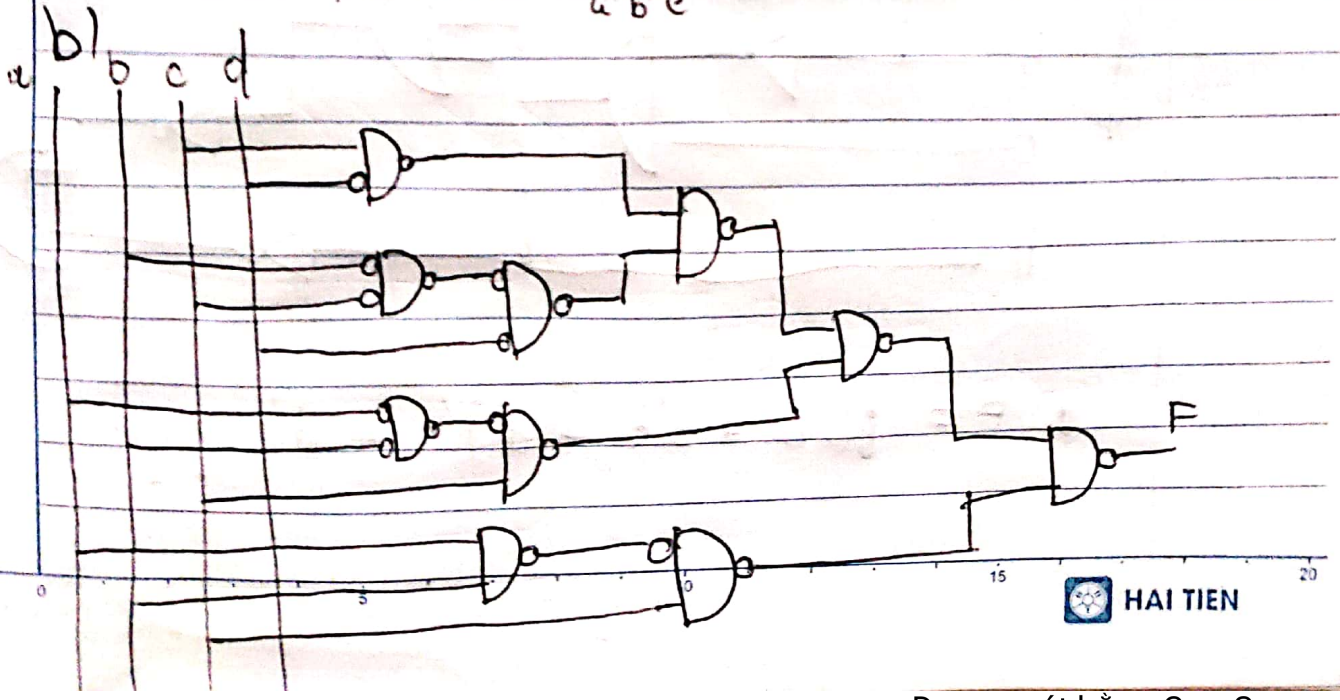
ab \ cd	00	01	11	10
00	1 (0)	0 (1)	1 (3)	1 (2)
01	0 (4)	0 (5)	0 (7)	1 (6)
11	0 (12)	0 (13)	1 (15)	1 (14)
10	1 (8)	0 (9)	0 (11)	1 (10)

$F = cd' + b'c'd' + a'b'c + abc$

a)



b)

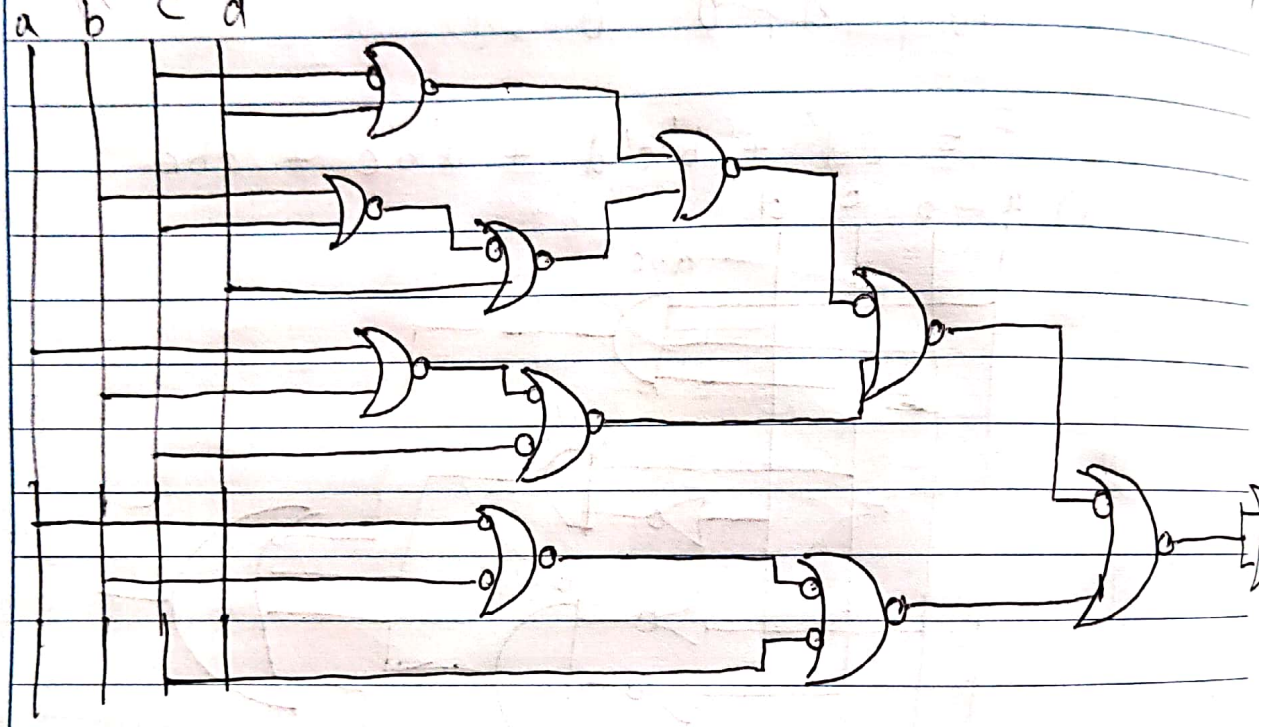


c) $F = cd' + b'c'd' + a'b'c + abc$

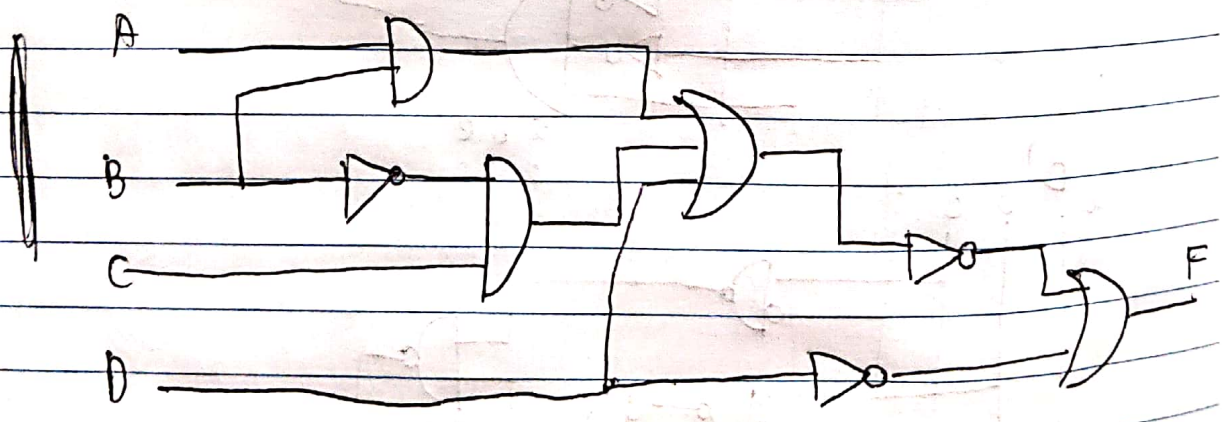
$= ((cd')')' + (((b'c'd')')' + ((a'b'c)')' + ((abc)')'$

$= (c'+d)' + (b+c+d)' + (a+b+c')' + (a'+b'+c$

$= (c'+d)' + ((b+c)'+d)' + ((a+b)'+c')' + ((a'+b')'+c')$



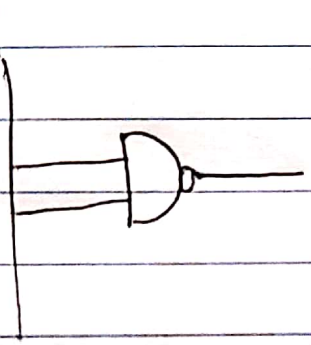
3.



a $F = ((ab + b'c + d)' + d'$

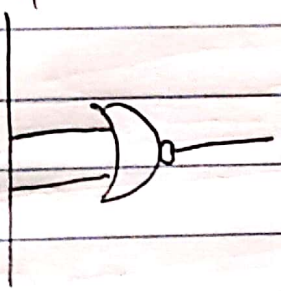
i) $F = (ab)' \cdot (b'c)' \cdot d' + d' = d'$

a) NAND



$(d \cdot d)' = d'$

b) NOR



$(d + d)' = d'$

F