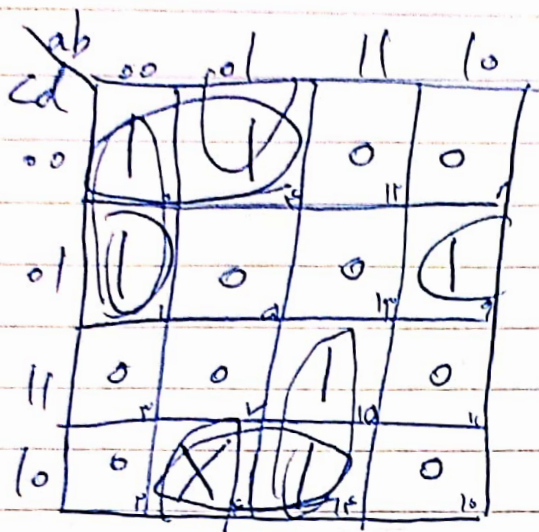


$$f(a, b, c, d) = \sum m(0, 1, 5, 8, 9, 14, 15) \cdot D(4)$$

(الف-٢)



PI

$a'c'd'$

$a'b'd'$

$a'b'c'$

abc

bcd'

$b'c'd$

EPI

$b'c'd$

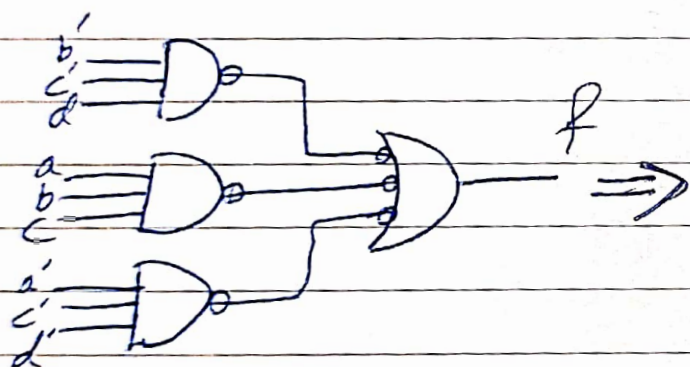
abc

+2

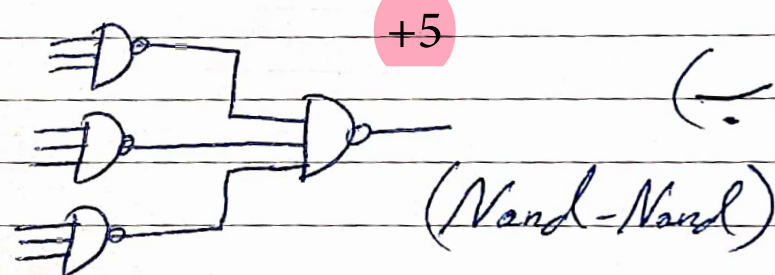
+6

$$f = b'c'd + abc + a'c'd'$$

+3

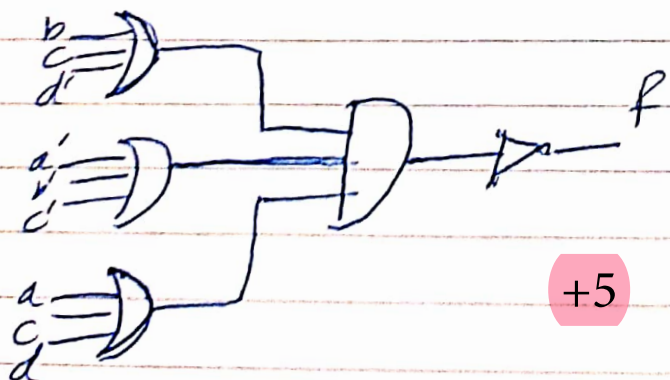


+5

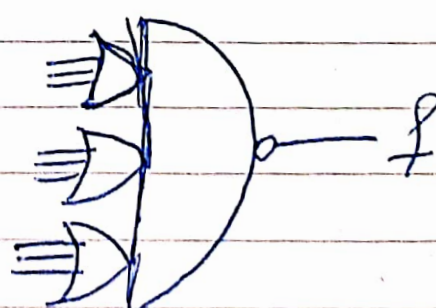


(Nand-Nand)

$$f(a, b, c, d) = (b+c+d) \cdot (a+b'c') \cdot (a+c+d)$$



+5



(7)

| | |
|--------|--------|
| ✓ 0000 | (000-) |
| ✓ 0001 | (0-00) |
| ✓ 0100 | (-001) |
| ✓ 0110 | (01-0) |
| ✓ 1001 | (-110) |
| ✓ 1110 | (111-) |
| ✓ 1111 | |

+8

+7

| PI | 0 | 1 | F | 9 | 1F | 1a |
|----------|---|---|---|---|----|--------------|
| $a'b'c'$ | X | X | | | | |
| $a'c'd'$ | X | | X | | | |
| $b'c'd$ | | X | | X | | |
| $a'bd'$ | | | X | | | |
| bcd' | | | | | X | |
| abc | | | | | X | X |
| | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

-6

$$f = abc + b'c'd + a'c'd'$$