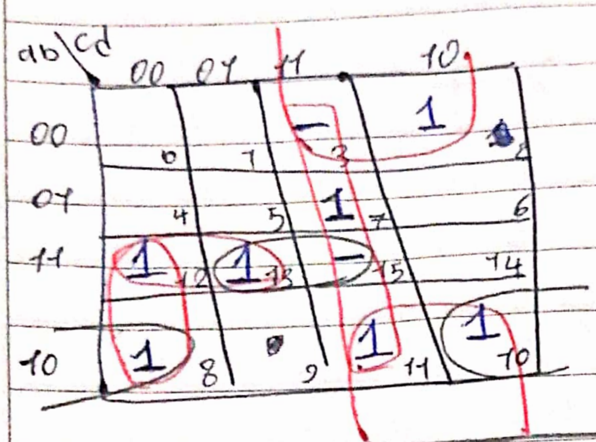
ماهر نهالی خنیرلو - ۹۹۴۲۳۱۸۰ - سیمین تعالی

Subject:
Year: Month: Date:

الف) $F(a,b,c,d) = \sum m(2,7,8,10,11,12,13) + d(3,15)$



PI ها:
- $a\bar{c}\bar{d}$
- $ab\bar{c}$
- cd
- $\bar{b}c$
- ~~$a\bar{b}\bar{c}$~~
- $ab\bar{d}$

EPI ها:
- $a\bar{c}\bar{d}$
- $ab\bar{c}$
- cd
- $\bar{b}c$

+1

+5

-1 for surplus EPIs

$F = a\bar{c}\bar{d} + ab\bar{c} + cd + \bar{b}c$

$F = ab\bar{c} + a\bar{b}\bar{d} + \bar{b}c + cd$

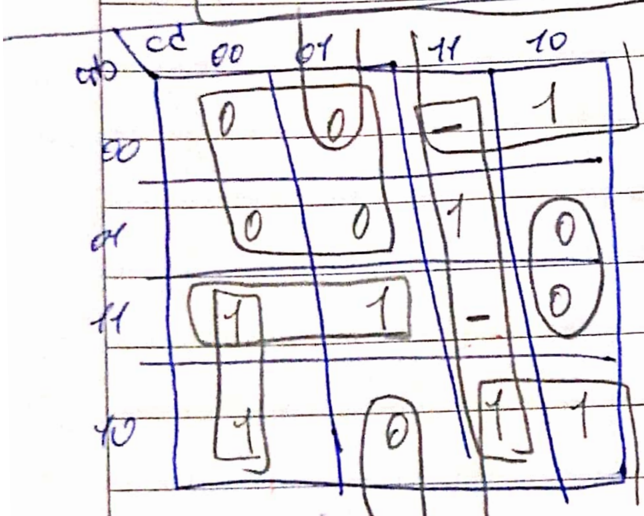
+4

-2 for missed another form

ب)

NOR → inv → $\bar{F}$

AND-OR inv → $\bar{F}$



$\bar{F} = \bar{a}\bar{c} + \bar{b}\bar{c}d + bc\bar{d}$

+3

$f = (a+c) \times (\bar{b}+\bar{c}+d)(b+c+\bar{d})$

+3

Sabalan

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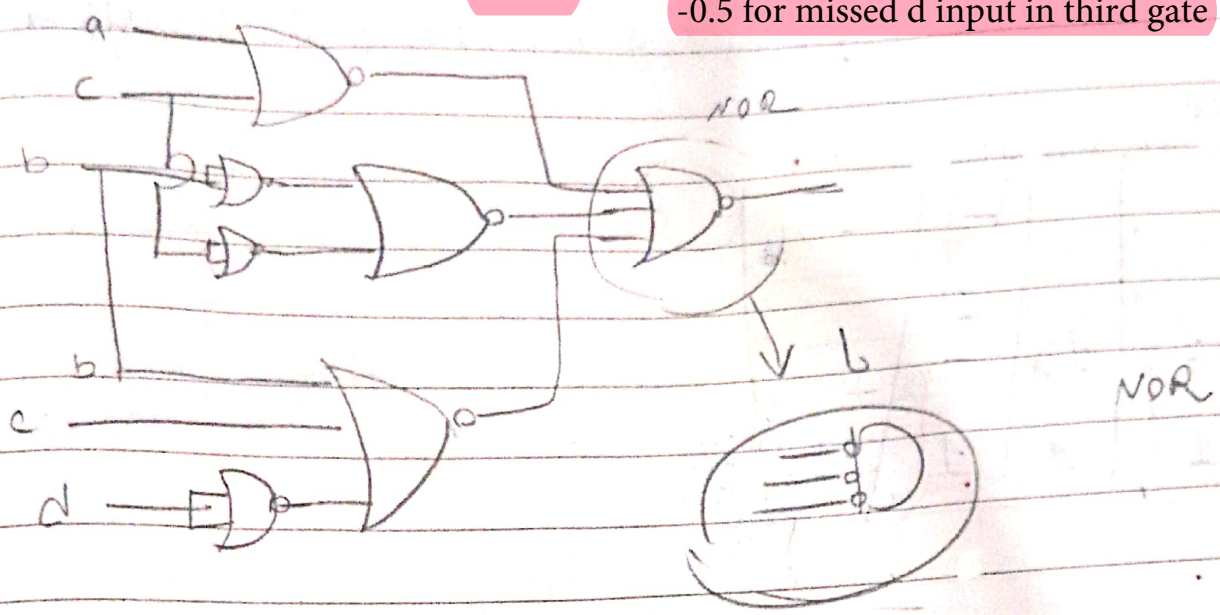
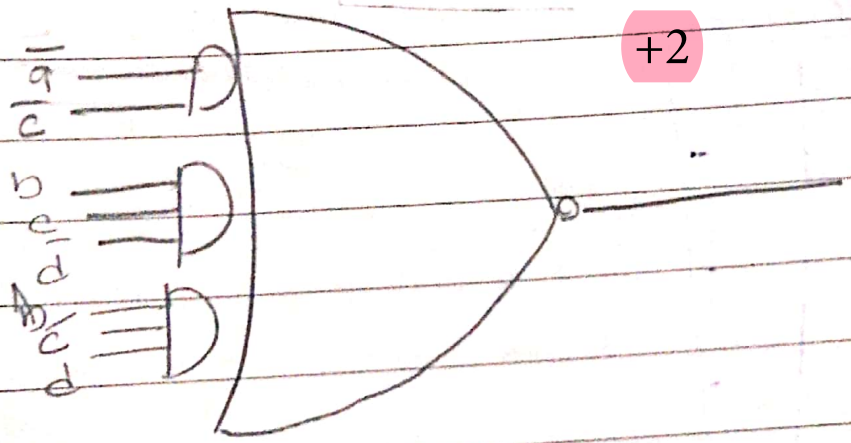
+1.5

-0.5 for missed d input in third gate



$$\bar{F} = \bar{a}\bar{c} + bc\bar{d} + \bar{b}\bar{c}d$$

+2



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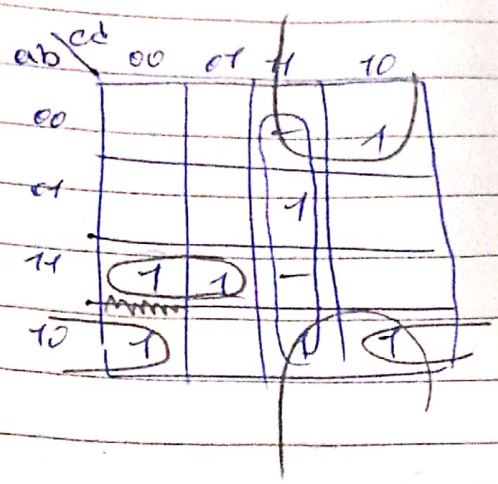
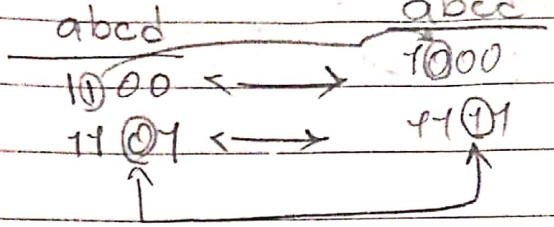
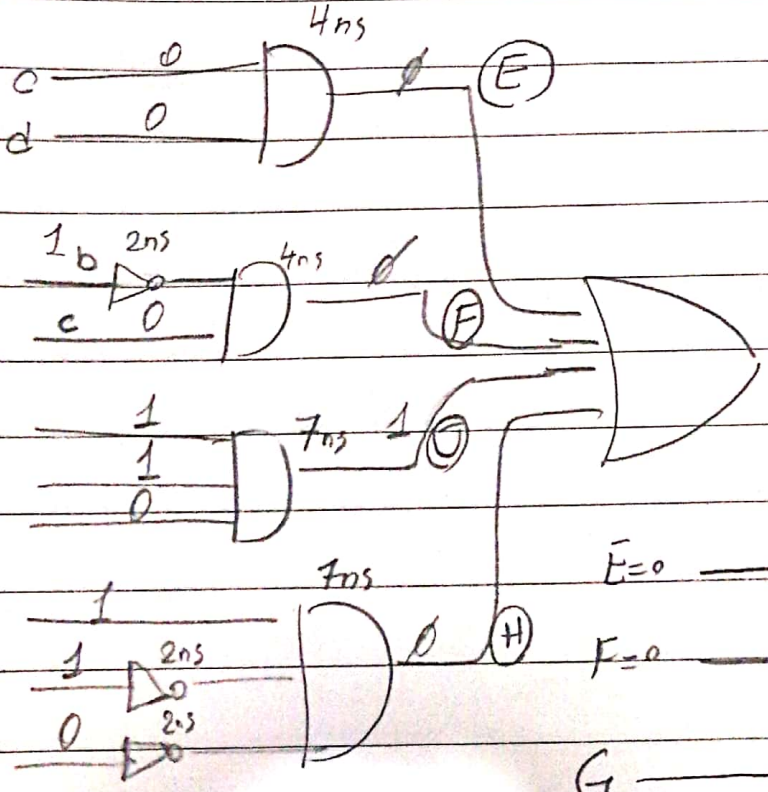


Hazard (>

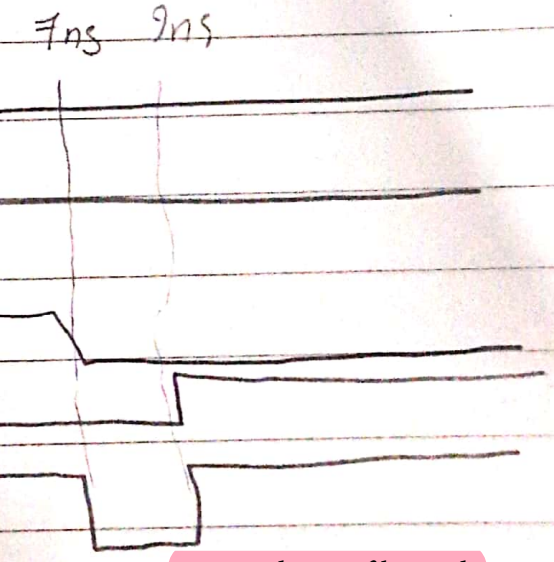
F =

+6





a	b	c	d
1	1	∅	∅



Hazard 1000 ~ 1100 ;)

1 static

+6

-6 missed rest of hazards

Sabalan ۹-۷ = 2ns

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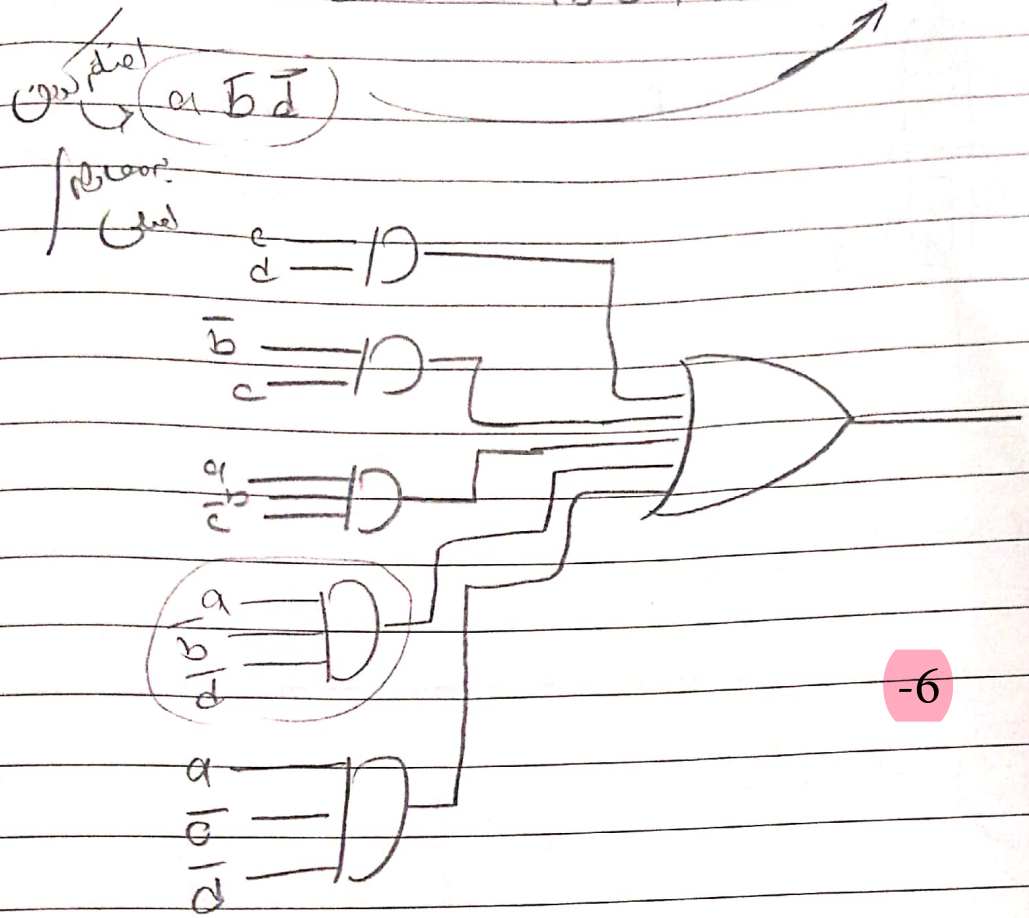
$$F = ed + \bar{b}e + ab\bar{c} + a\bar{c}\bar{d} + \bar{a}b\bar{d}$$



-6

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a b c d

2 0 0 1 0

3 0 0 1 1

✓ 2 0 0 1 0

✓ 8 1 0 0 0

✓ 3 0 0 1 1

✓ 10 1 0 1 0

✓ 12 1 1 0 0

✓ 7 0 1 1 1

✓ 11 1 0 1 1

✓ 13 1 1 0 1

✓ 15 1 1 1 1

2,3 0 0 1 – ✓

2,10 – 0 1 0

8,10 1 0 – 0

8,12 1 – 0 0

3,7 0 – 1 1 ✓

3,11 – 0 1 1

10,11 1 0 1 – ✓

12,13 1 1 0 –

1,15 – 1 1 1

11,15 1 – 1 1 ✓

13,15 1 1 – 1

2) 2,3,10,11

– 0 1 –

3,7,11,15

– – 1 1

+8

Sabalan