

کوئیز دوم

cd \ ab	00	01	11	10
00	1	1	1	1
01	1	1		1
11	-			
10	1		-	1

$$\begin{aligned} \text{PI} \\ \hline \bar{a}\bar{b} \\ \bar{c}\bar{d} \\ \bar{a}\bar{c} \\ \bar{a}\bar{d} \\ \bar{b}c \end{aligned}$$

$$\begin{aligned} \text{EPI} \\ \hline \bar{a}\bar{c} \\ \bar{c}\bar{d} \\ \bar{a}\bar{d} \\ bc \end{aligned}$$

(الف)

+5

+1

-1 for surplus EPIs

-1 for missed PI

شکل ساده شده (sop)

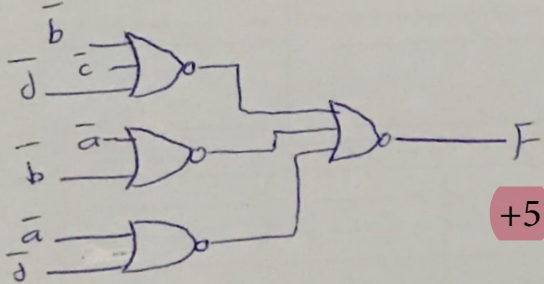
$$\bar{a}\bar{c} + \bar{c}\bar{d} + \bar{a}\bar{d} + \bar{b}c$$

+2

-4 for missed Fs

ب) باتوجه به جدول کارتی سوال ۱ قسمت الف مشاهده می کنیم که تابع به صورت یک دسته می دو تایی و یک دسته چهار تایی ساده می شود و داریم

$$(POS) : (\bar{b} + \bar{c} + \bar{d})(\bar{a} + \bar{b})(\bar{a} + \bar{d})$$

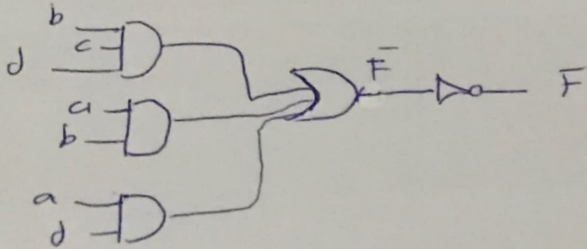


NAR - NOR

+5

تا F، به صورت sop ساده می کنیم

$$bcd + ab + ad$$



+5

✓ 0	✓ (0, 1) 1	(0, 1, 2, 3) (1, 2) ✓
✓ 1	✓ (0, 2) 2	(0, 1, 3, 4) (1, 4) ✓
✓ 2	✓ (0, 4) 4	(0, 2, 3, 4) (2, 3)
✓ 4	✓ (0, 8) 8	(0, 2, 4, 8) (2, 4) ✓
✓ 8	✓ (1, 3) 3	(0, 2, 8, 10) (2, 8) ✓
✓ 3	✓ (1, 5) 5	(0, 4, 8, 12) (4, 8)
✓ 5	✓ (2, 3) 1	(0, 8, 12, 14) (8, 12) ✓
✓ 7	✓ (2, 4) 4	(0, 10, 12, 14) (10, 12)
✓ 10	✓ (2, 10) 10	(0, 10, 14, 16) (10, 14) ✓
✓ 12	✓ (4, 8) 1	(0, 12, 14, 16) (12, 14)
✓ 11	✓ (4, 4) 2	(0, 12, 16, 18) (12, 16)
	✓ (4, 12) 8	(0, 14, 16, 18) (14, 16)
	✓ (8, 10) 2	(2, 3, 10, 11) (1, 8) ✓
	✓ (8, 12) 4	(2, 10, 12, 11) (2, 11)
	✓ (12, 11) 1	
	✓ (10, 11) 1	

+8

ωPI	0	1	2	3	4	5	6	7	8	9	10
$\bar{a}\bar{c}d$		x		x							
$\bar{a}\bar{b}$	x	x	x	x							
$\bar{a}\bar{c}$	x	x			x	x					
$\bar{a}\bar{d}$	x		x		x		x				
$\bar{b}\bar{d}$	x		x		x			x	x		
$\bar{c}\bar{d}$	x			x	x						x
$\bar{a}b$			x	x							
	✓	✓	✓		✓	✓		✓			

PI
$\bar{a}\bar{c}d$
$\bar{a}\bar{b}$
$\bar{a}\bar{c}$
$\bar{a}\bar{d}$
$\bar{b}\bar{d}$
$\bar{c}\bar{d}$
$\bar{a}b$

+4

-2

$$\bar{a}\bar{c} + \bar{a}\bar{d} + \bar{a}b + \begin{cases} \bar{b}\bar{d} \\ \bar{c}\bar{d} \end{cases}$$