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Kelas : D

MODUL 6

Kegiatan Praktikum

Percobaan 1

KEGIATAN PRAKTIKUM

Percobaan 1

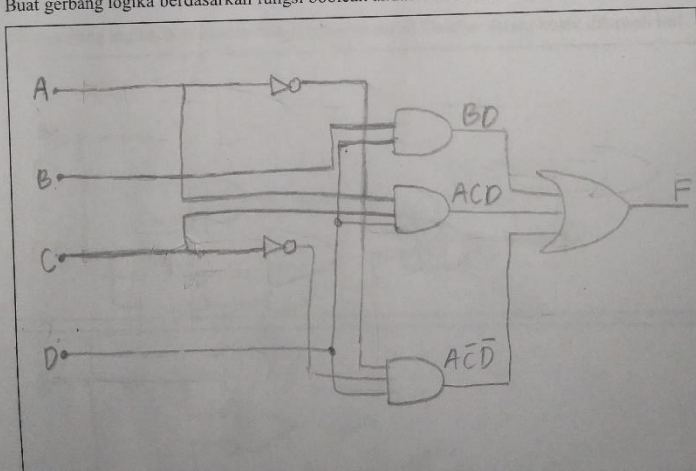
1. Buat kombinasi gerbang logika berdasarkan peta karnaughberikut.

		AB			
		00	01	11	10
CD	00	0	0	0	0
	01	1	1	1	0
	11	0	1	1	1
	10	0	0	0	0

Handwritten annotations on the Karnaugh map:
- A green circle around the cells (01, 01) and (11, 01) is labeled BD .
- A pink circle around the cells (01, 01) and (01, 11) is labeled $\bar{A}\bar{C}D$.
- A blue circle around the cells (11, 01) and (11, 11) is labeled ACD .

2. Fungsi boolean : $F = BD + ACD + \bar{A}\bar{C}D$

3. Buat gerbang logika berdasarkan fungsi boolean anda! Gambar dalam kotak dibawah ini!



Percobaan 2

Percobaan 2

1. Buat kombinasi gerbang logika berdasarkan peta karnaugh berikut!

		AB			
		00	01	11	10
CD	00	1	0	0	1
	01	0	1	1	0
	11	0	1	1	0
	10	1	0	0	1

Handwritten annotations on the Karnaugh map:

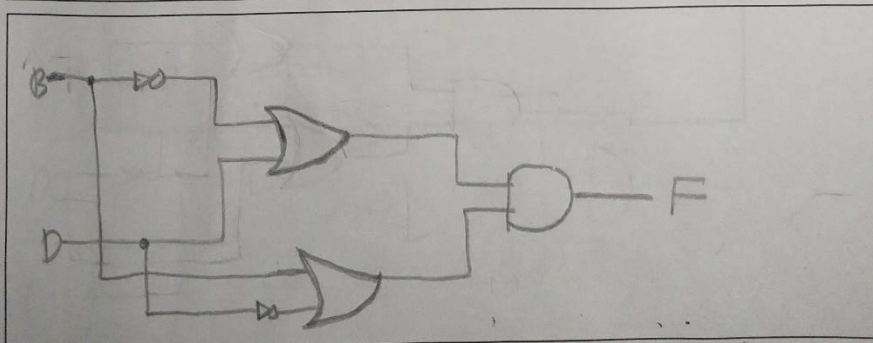
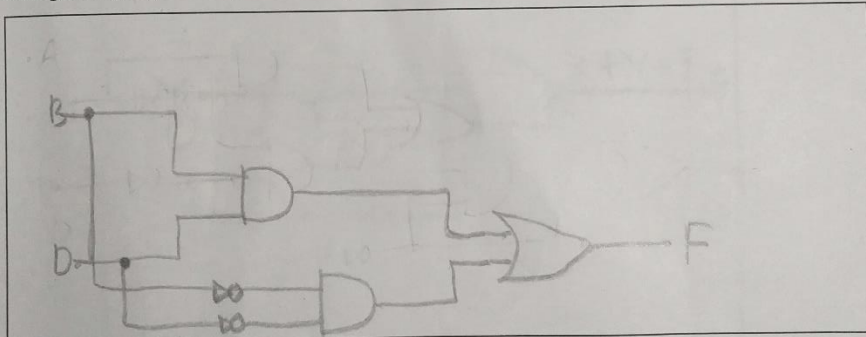
- Group 1 (top row, columns 00 and 10): $\bar{B}\bar{D}$ (pink arrow)
- Group 2 (middle row, columns 01 and 11): BD (blue arrow)
- Group 3 (bottom row, columns 01 and 11): $B\bar{D}$ (orange arrow)

2. Fungsi boolean :

$$F = \bar{B}\bar{D} + BD \quad \text{(AND-OR) SOP}$$

$$F = (B + D)(B + \bar{D}) \quad \text{(OR-AND) POS}$$

3. Buat gerbang logika berdasarkan fungsi boolean anda! Gambar dalam kotak dibawah ini!



Apakah kedua kombinasi memberikan hasil yang sama? Ya/ tidak

Percobaan 3

Percobaan 3

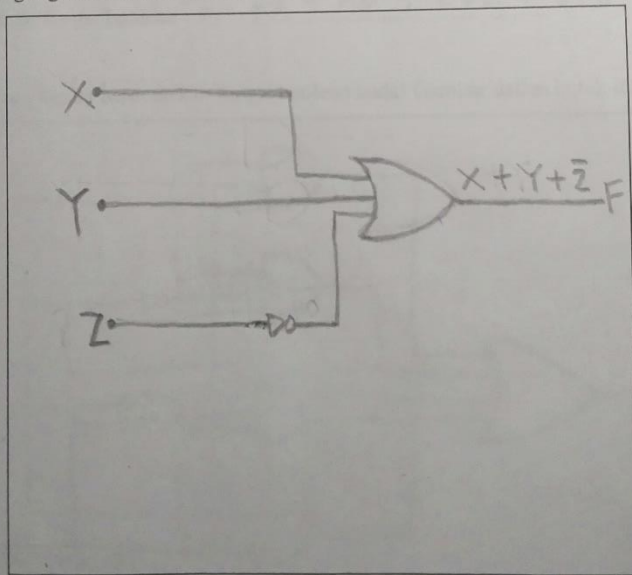
1. Fungsi boolean : $F = XYZ + XYZ' + XY'Z + X'YZ + X'YZ' + XY'Z' + X'Y'Z'$.

2. Berdasarkan fungsi boolean, isi titik-titik dalam peta karnaugh berikut!

		XY			
		00	01	11	10
Z	0
	1

3. Sederhanakan fungsi boolean : $F = X + Y + \bar{Z}$

4. Buat gerbang logika berdasarkan fungsi boolean anda! Gambar dalam kotak dibawah ini!



Percobaan 4

Percobaan 4

1. Fungsi boolean : $F = AD' + ABC + ABC' + BCD + BC'D' + AB'CD'$.

2. Berdasarkan fungsi boolean, isi titik-titik dalam peta karnaugh berikut!

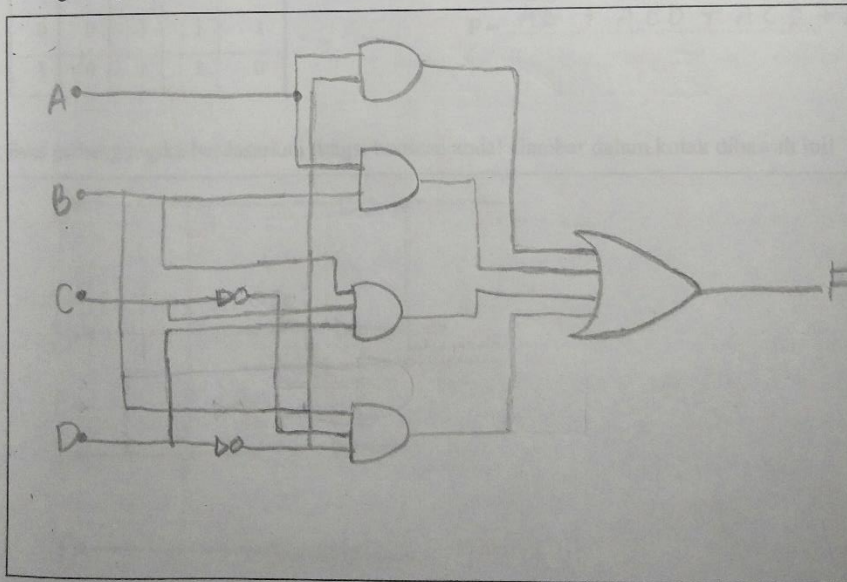
		AB			
		00	01	11	10
CD	00	1	1
	01	1
	11	1	1
	10	1	1

Handwritten annotations on the Karnaugh map:

- Group 1 (top row, columns 01 and 11): $B\bar{C}\bar{D}$ (blue arrow)
- Group 2 (middle row, columns 01 and 11): AB (pink arrow)
- Group 3 (bottom row, columns 01 and 11): BCD (orange arrow)
- Group 4 (bottom row, columns 11 and 10): $A\bar{D}$ (blue arrow)

3. Sederhanakan fungsi boolean : $F = \underline{A\bar{D} + AB + BCD + B\bar{C}\bar{D}}$

4. Buat gerbang logika berdasarkan fungsi boolean anda! Gambar dalam kotak dibawah ini!



Percobaan 5

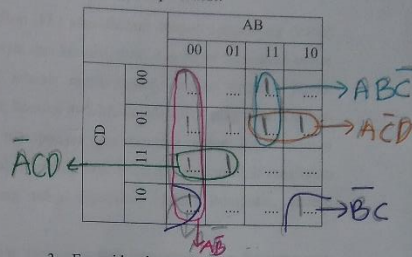
Percobaan 5

1. Tabel Fungsi boolean :

A	B	C	D	F
0	0	0	0	1
1	0	0	0	0
0	1	0	0	0
1	1	0	0	1
0	0	1	0	1
1	0	1	0	1
0	1	1	0	0
1	1	1	0	0
0	0	0	1	1
1	0	0	1	1
0	1	0	1	0
1	1	0	1	1
0	0	1	1	1
1	0	1	1	0

0	1	1	1	1
1	1	1	1	0

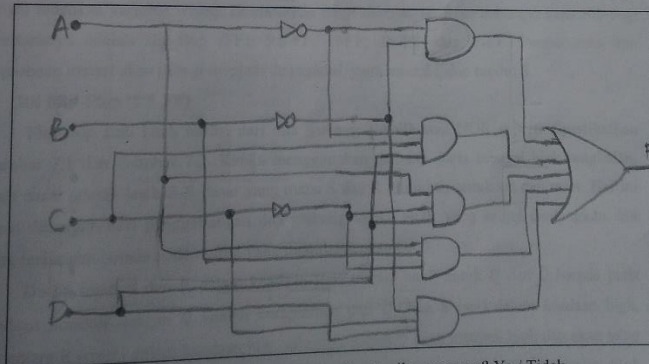
2. Berdasarkan tabel. Isi titik-titik dalam karnaugh map berikut!



3. Fungsi boolean sederhana:

$$F = AB + ACD + A\bar{C}D + AB\bar{C} + \bar{B}CD$$

Buat gerbang logika berdasarkan fungsi boolean anda! Gambar dalam kotak dibawah ini!



Apakah kedua kombinasi memberikan hasil yang sama? Ya / Tidak