

3.8
a)

AND $Z = A \cdot B$

NOT $Z = \bar{A}$

NAND $Z = \overline{A \cdot B}$

NOR $Z = \overline{A + B}$

OR $Z = A + B$

XOR $Z = A \oplus B$

$(Z = \bar{A} \cdot B + A \cdot \bar{B})$

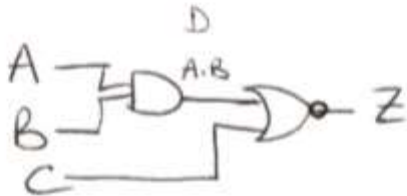
b) 3.8.1 $Z = A + B + C$

3.8.2 $Z = A \cdot B \cdot C$

3.8.3 $Z = \overline{A \cdot B \cdot C \cdot D}$

3.8.4 $Z = A \oplus B \oplus C$

3.9
a)



$Z = (A \cdot B) + C$

A	B	C	D	Z
0	0	0	0	1
0	0	1	0	0
0	1	0	0	1
0	1	1	0	0
1	0	0	0	1
1	0	1	0	0
1	1	0	1	0
1	1	1	1	0

00	OR	NOR
01	0	1
10	1	0
11	1	0



$Z = \overline{A + B}$

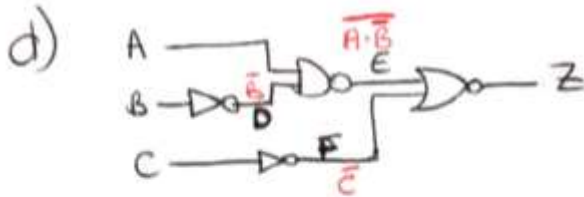
A	B	C	Z
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0



$$Z = \overline{A \cdot B} = A \cdot \overline{B}$$

A	B	C	Z
0	0	1	0
0	1	1	0
1	0	1	0
1	1	0	1

00	AND	NAND
01	00	1
10	00	1
11	01	0

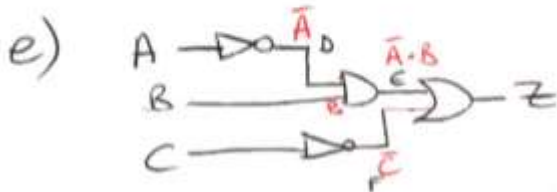


$$Z = \overline{A \cdot B} + \overline{C}$$

A	B	C	D	E	F	Z
0	0	0	1	1	1	0
0	0	1	1	1	0	0
0	1	0	1	0	1	0
0	1	1	1	0	0	0
1	0	0	1	0	1	0
1	0	1	1	0	0	0
1	1	0	1	1	1	0
1	1	1	1	1	0	0

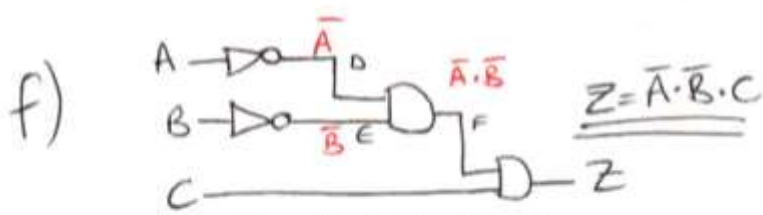
A·B	E
0	1
0	1
0	0
0	1
0	1
1	0
1	0

00	OR	NOR
01	1	0
10	1	0
11	0	1



$$Z = \overline{A \cdot B} + \overline{C}$$

A	B	C	D	E	F	Z
0	0	0	1	0	1	1
0	0	1	1	0	0	0
0	1	0	1	1	1	1
0	1	1	1	0	0	0
1	0	0	0	0	1	1
1	0	1	0	0	0	0
1	1	0	0	1	1	1
1	1	1	0	0	0	0



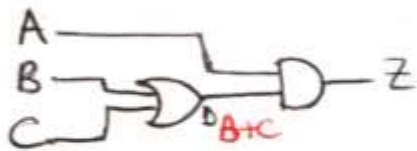
$$Z = \overline{A \cdot B} \cdot C$$

A	B	C	D	E	F	Z
0	0	0	1	1	1	0
0	0	1	1	1	1	0
0	1	0	1	0	0	0
0	1	1	1	0	0	0
1	0	0	0	0	0	0
1	0	1	0	0	0	0
1	1	0	0	1	0	0
1	1	1	0	0	0	0

3.10.

(A)

a)

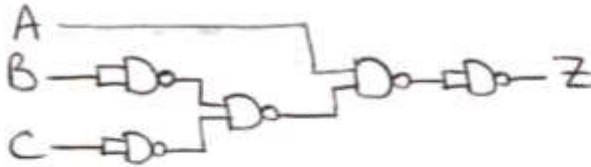


$$\underline{\underline{Z = A \cdot (B + C)}}$$

b)

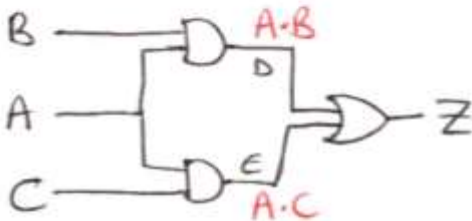
A	B	C	D	Z
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	1	0
1	0	0	0	0
1	0	1	1	0
1	1	0	1	0
1	1	1	1	0

c)



(B)

a)

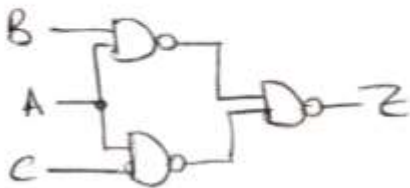
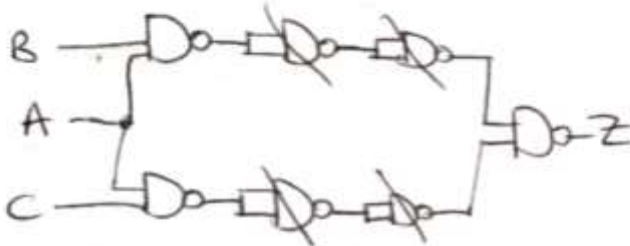


$$\underline{\underline{Z = (A \cdot B) + (A \cdot C)}}$$

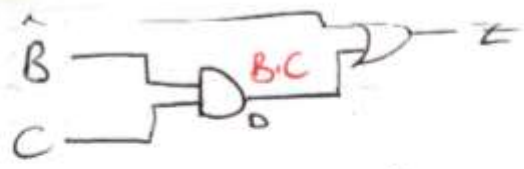
b)

B	A	C	D	E	Z
0	0	0	0	0	0
0	0	1	0	0	0
0	1	0	0	0	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	0	0
1	1	1	0	0	0

c)



c)

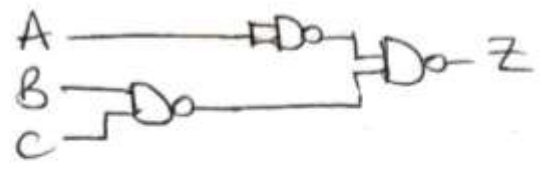
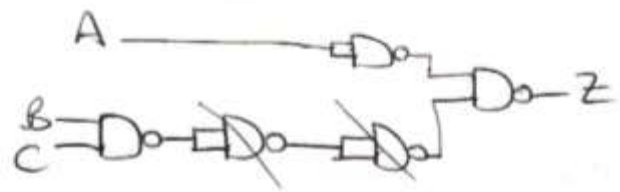


$$Z = A + (B \cdot C)$$

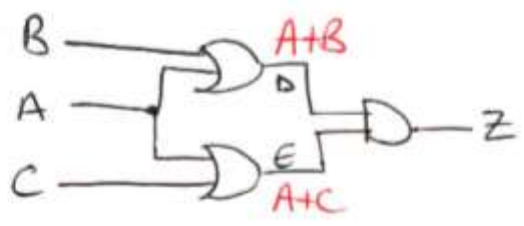
b)

A	B	C	D	Z
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	0	0
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	0	1

c)



④ a)

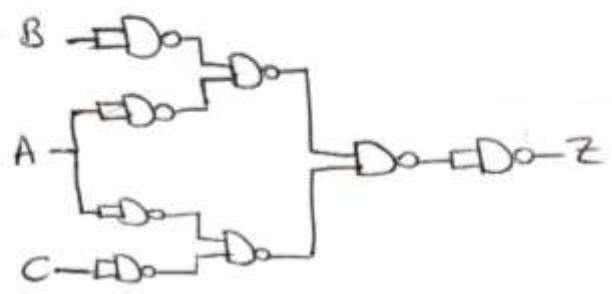


$$Z = (A + B) \cdot (A + C)$$

b)

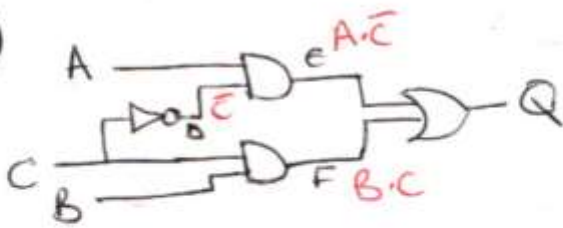
A	B	C	D	E	Z
0	0	0	0	0	0
0	0	1	0	0	0
0	1	0	0	0	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	0	0
1	1	1	0	0	0

c)



Ⓔ

a)

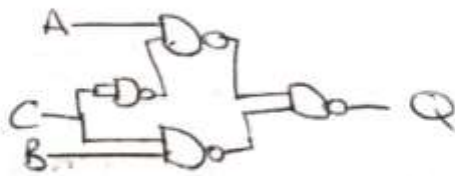
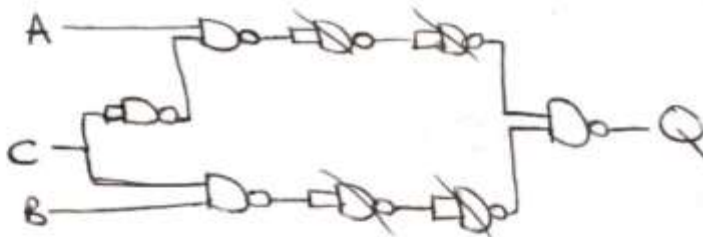


$$Z = (A \cdot \bar{C}) + (B \cdot C)$$

b)

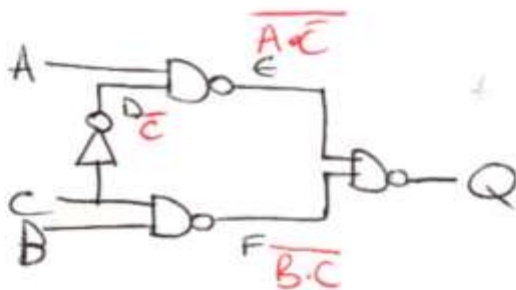
A	B	C	D	E	F	Q
0	0	0	1	0	0	0
0	0	1	1	0	0	0
0	1	0	0	0	0	0
0	1	1	0	0	1	1
1	0	0	0	0	0	0
1	0	1	0	0	0	0
1	1	0	0	0	0	0
1	1	1	0	0	1	1

c)



	AND	NAND
00	0	1
01	0	1
10	0	1
11	1	0

Ⓕ a)



$$Z = \overline{(A \cdot \bar{C}) \cdot (B \cdot C)}$$

b)

A	B	C	D	E	F	Q
0	0	0	1	1	1	0
0	0	1	0	1	1	0
0	1	0	0	1	1	0
0	1	1	0	0	0	1
1	0	0	0	0	0	1
1	0	1	0	0	0	1
1	1	0	0	0	0	1
1	1	1	0	0	0	1

c)

