

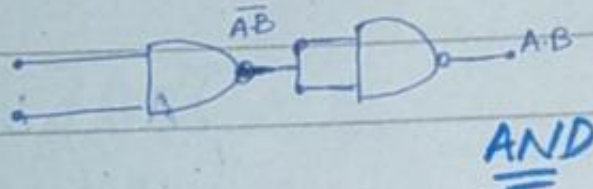
20P-0640

Name Waleed Akram
Roll No 20P-0640

Question #1

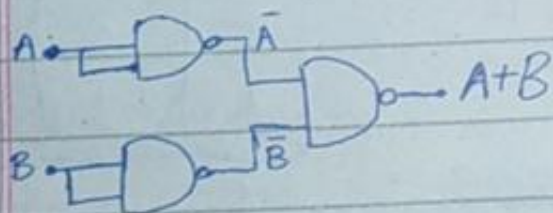
All other Gates using NAND gate.

AND Gate



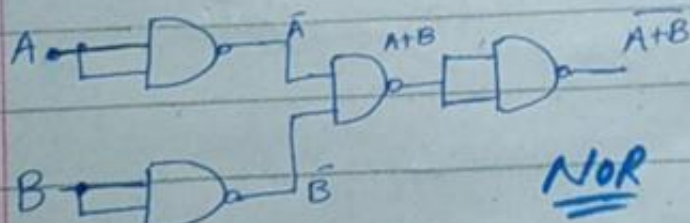
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

OR Gate



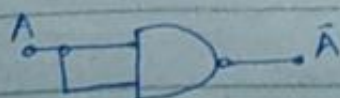
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

NOR Gate



A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

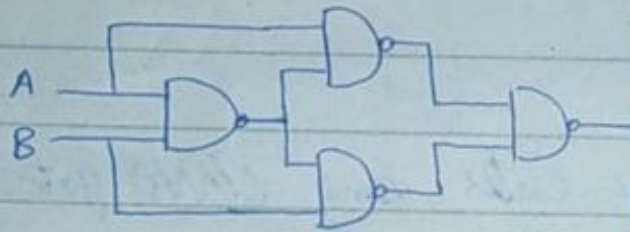
NOT Gate



A	Y
0	1
1	0

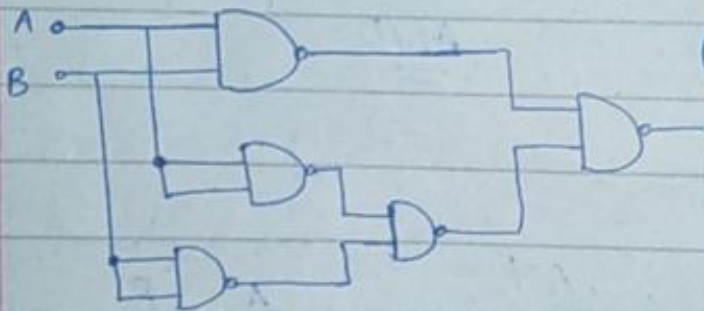
20P-0640

XOR Gate



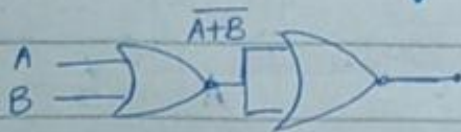
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

XNOR Gate



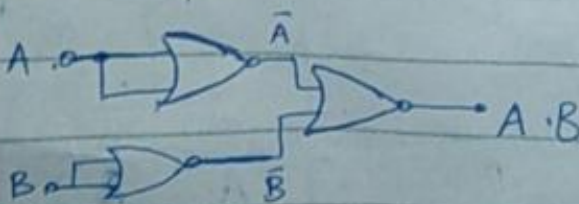
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

All other gates using all other
NOR only.



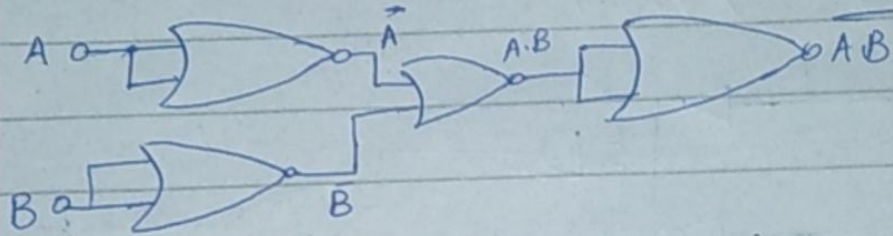
OR Gate

AND Gate

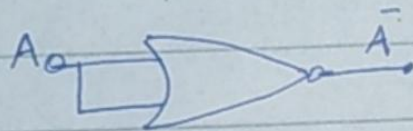


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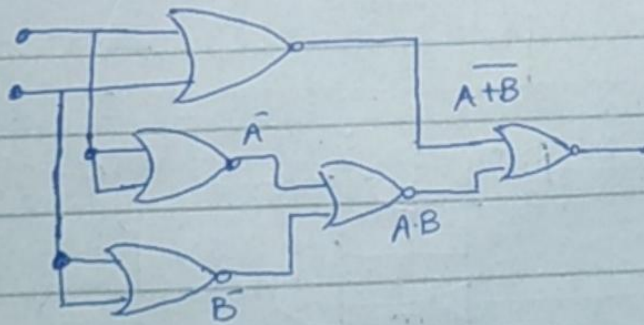
NAND Gate



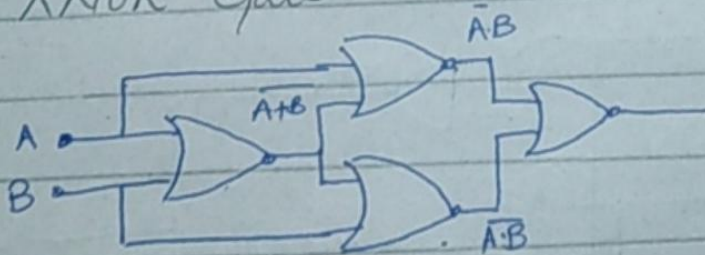
NOT Gate



XOR Gate

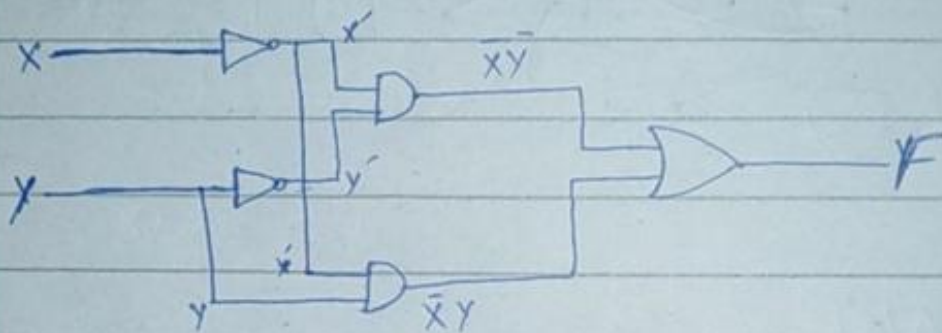


XNOR Gate

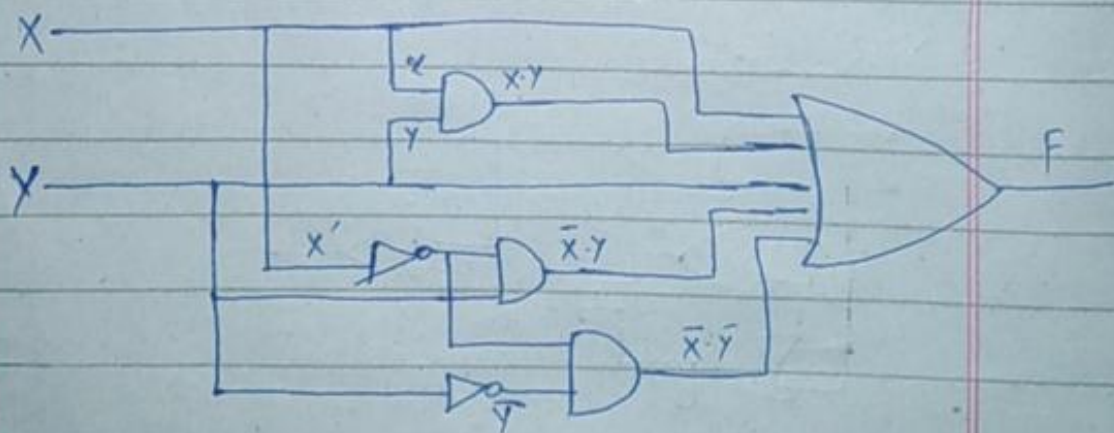


Task #3

$$F = \bar{x}y + \bar{x}\bar{y}$$



$$F = x + y + xy + \bar{x}y + \bar{x}\bar{y}$$



$$F = xy + xyz + \bar{x}\bar{y}\bar{z} + x\bar{y}\bar{z}$$

