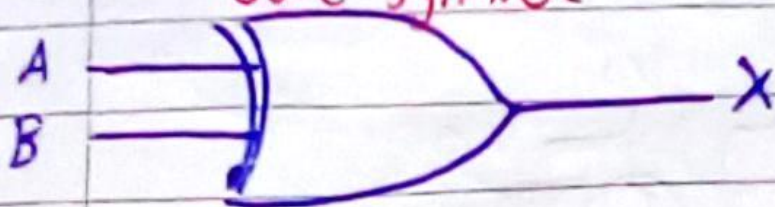


Practical 6-logic Gates

Q1a XOR

Gate Symbol



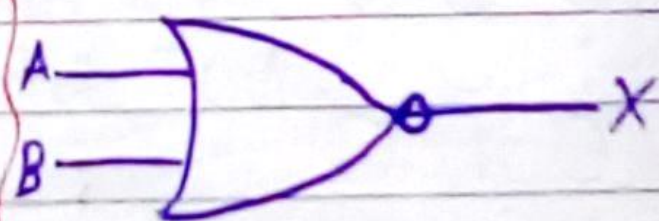
functional Notation

$$X = \text{AND}(\text{OR}(A, B), \text{NOT}(\text{AND}(A, B)))$$

Truth table

A	B	X
0	0	0
1	0	1
0	1	1
1	1	0

Q1b) NOR



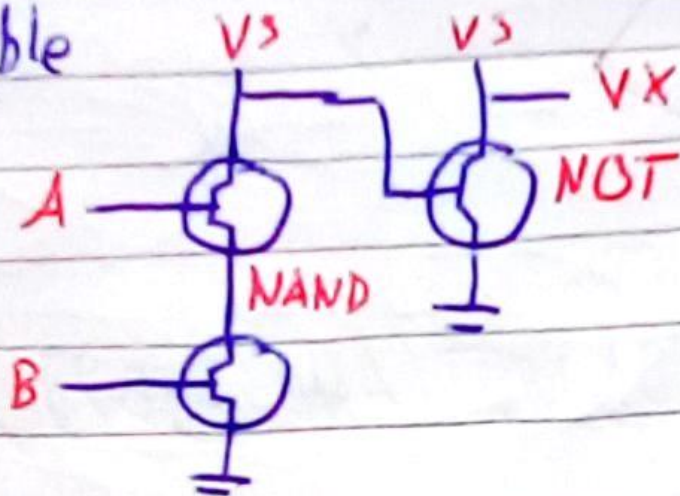
functional Notation:

$$X = \text{NOT}(\text{OR}(A, B))$$

Truth table:

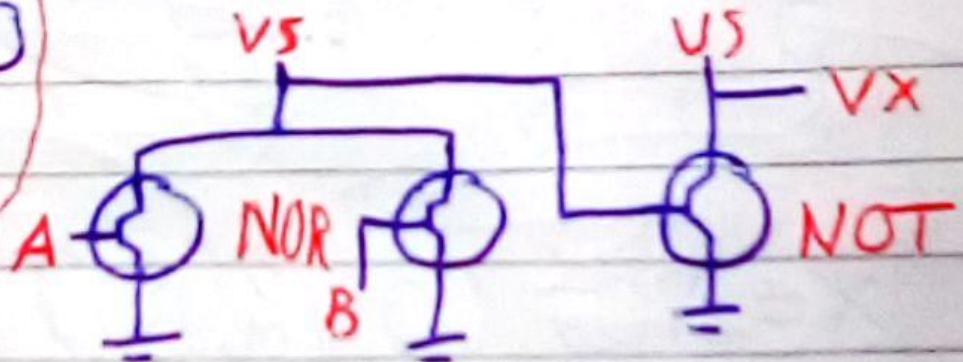
A	B	X
0	0	1
1	0	0
0	1	0
1	1	0

b AND Gate - Circuit diagram which consists of NAND and NOT Gates and truth table



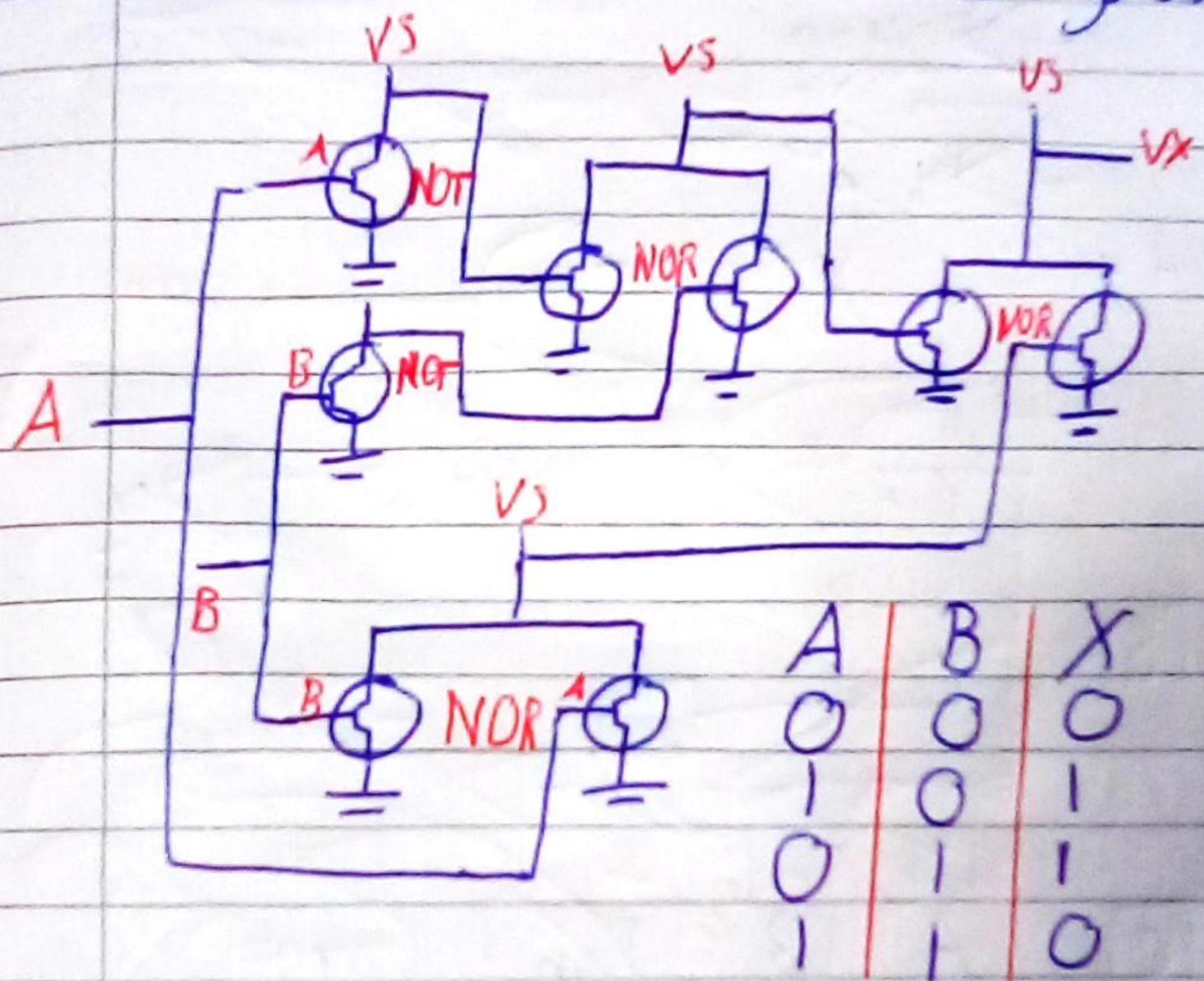
A	B	X
0	0	0
1	0	0
0	1	0
1	1	1

c) OR Gate - Circuit Diagram which consists of NOR and NOT Gates with truth table

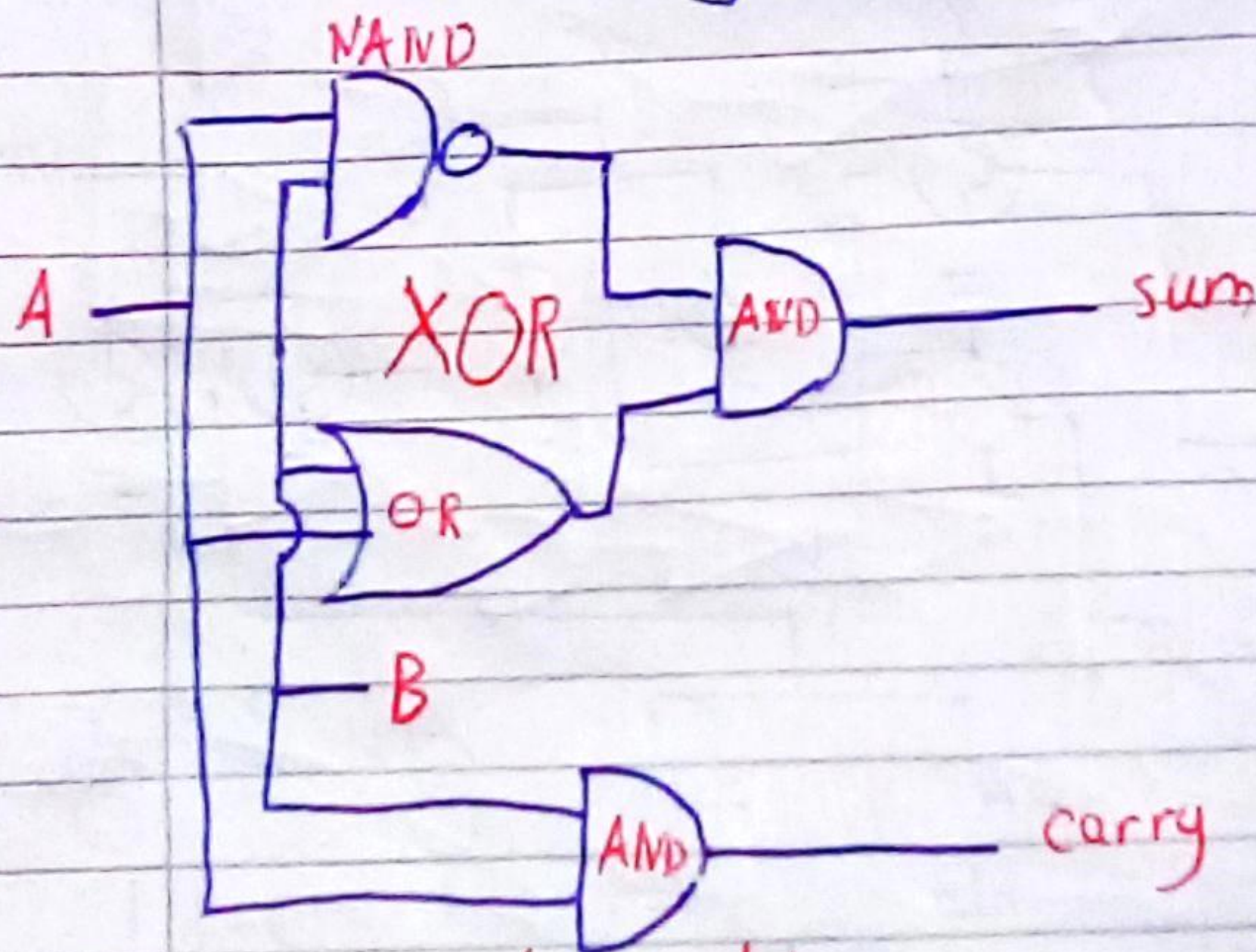


A	B	X
0	0	0
1	0	1
0	1	1
1	1	1

Q2c XOR Gate - circuit diagram which consists of ~~NOR~~ NOR and NOT gates



d HALF adder with only NAND, OR and AND gates



Truth table

A	B	Sum	Carry
0	0	0	0
1	0	1	0
0	1	1	0
1	1	0	1

Q3

Truth table

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

Construct the following circuit using NAND and NOT gates and complete truth tables.

