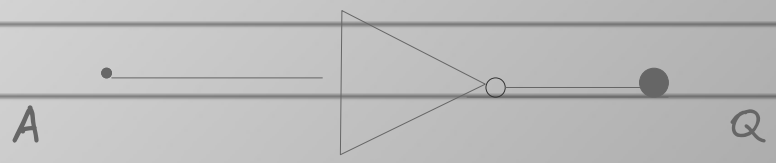
Practical-1

Aim :Study and verifythe truthtableof various logic gates (NOT, AND, OR, NAND, NOR, EX-OR, and EX-NOR).

1. NOT gate

Logic Diagram



Truth Table

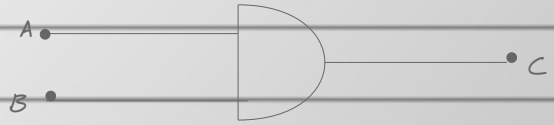
A	Q
0	1
1	0

Boolean Expression Q = not A or $\overline{A}$

2. AND gate

Logic

Diagram



Truth Table

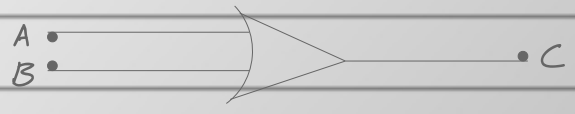
A	B	Q
0	0	0
0	1	0
1	0	0
1	1	1

Boolean Expression Q = A.B

3. OR gate

Logic

Diagram

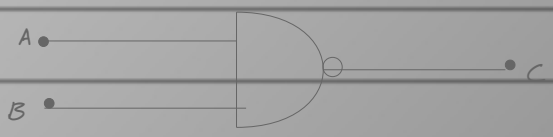


Truth Table

A	B	Q
0	0	0
0	1	1
1	0	1
1	1	1

4. NAND gate

Logic Diagram



Truth

Table

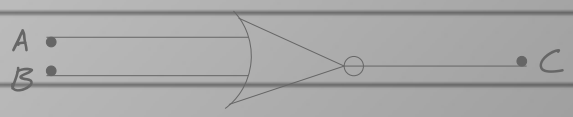
A	B	Q
0	0	1
0	1	1
1	0	1
1	1	0

Boolean Expression

$Q = A.B$

5. NOR gate

Logic Diagram



Truth Table

A	B	Q
0	0	

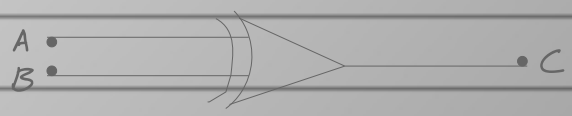
1		
0	1	0
1	0	0
1	1	0

Boolean Expression

$Q = A+B$

6. EX-OR gate

Logic Diagram



Truth Table

A	B	Q
0	0	0
0	1	1
1	0	1
1	1	

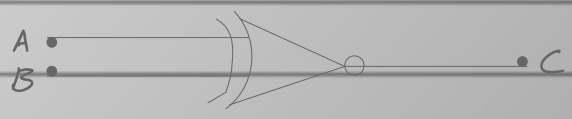
0

Boolean Expression

$Q = A \oplus B$

7. EX-NOR gate

Logic Diagram



Truth Table

A	B	Q
0	0	1
0	1	0
1	0	0
1	1	1

Boolean