

Logic Gates

Truth Table

Circuit Representation

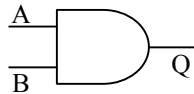
Boolean Expression

AND Gate

AND Gate

AND Gate

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



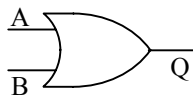
$$Q = AB$$

OR Gate

OR Gate

OR Gate

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



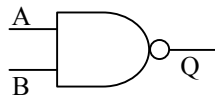
$$Q = A + B$$

NAND Gate

NAND Gate

NAND Gate

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



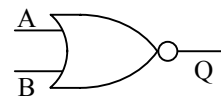
$$Q = \overline{AB}$$

NOR Gate

NOR Gate

NOR Gate

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



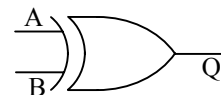
$$Q = \overline{A + B}$$

XOR Gate

XOR Gate

XOR Gate

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



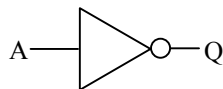
$$Q = A \oplus B$$

NOT Gate

NOT Gate

NOT Gate

A	Q
0	1
1	0



$$Q = \overline{A}$$