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
A Q
Truth Table  A Q 0 7
Boolean Expression Q = not A or A
2. AND gate
Logic

Diagram
A• C
Truth Table
0     7     0       1     0     0       1     7     7
Boolean Expression Q = A.B
3. OR gate
Logic

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Diagram
A • C
Truth Table
0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
1 1 1
4. NAND gate
Logic Diagram
A •————————————————————————————————————
B •
Truth

Table
A B Q
0 0 7
0 7 7 1 0 7
1 1 0
Boolean Expression
$Q = A_{\bullet}B$
5. NOR gate
Logic Diagram
A • C
Truth Table

7 O 7 O
7 0 0 7 7 0
Boolean Expression
Q = A+B
6. EX-OR gate
Logic Diagram
A • C
Truth Table  A B Q
7 0 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7

0
Boolean Expression
$Q = A \oplus B$
7. EX-NOR gate
Logic Diagram
A • C
Truth Table
A B Q
0 0 7
1 0 0
7 7 7
Boolean
Doocean