BASIC LOGIC BLOCK - GATE -

```
Binary      ──→                          Binary
Digital     ──→      ┌─────────┐         Digital
            ──→      │  Gate   │──→       Output
Input       ⋮        │         │         Signal
Signal      ──→      └─────────┘
```

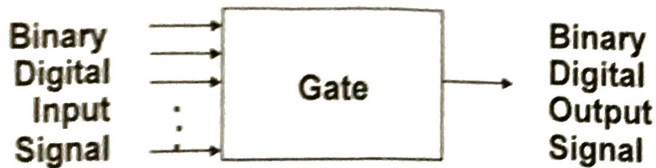**Types of Basic Logic Blocks**

- **Combinational Logic Block**
  Logic Blocks whose output logic value
  depends only on the input logic values

- **Sequential Logic Block**
  Logic Blocks whose output logic value
  depends on the input values and the
  state (stored information) of the blocks

Functions of Gates can be described by

- Truth Table
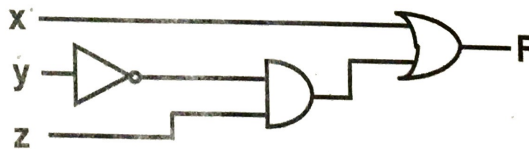- Boolean Function
- Karnaugh Map

0-2

LOGIC CIRCUIT DESIGN

x	y	z	F
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

Truth Table

Boolean Function

$$F = x + y'z$$

Logic Diagram

x

y

z

F

Computer Organization

Boolean Function

$$F = x + Y \cdot Z$$

$$\downarrow \quad \text{AND gate operator}$$

All Equivalent $\left\{ \begin{array}{l} = X \cdot Z \\ = Y \cdot Z \\ = \overline{Y} \cdot Z \\ = /Y \cdot Z \end{array} \right.$