# RAMJAYAM VIDYAA MANDIR MATRIC HR SEC SCHOOL.CUMBUM

**Chapter 4to 6**

**Important 2 Mark 3mark and 5 mark questions & Answers**


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**+1 HIGHER SECONDARY 2MARK 3MARK AND 5 MARK IMPORTANT Q & A**

## 4. WORKING PRINCIPLE OF DIGITAL LOGIC

**2 MARK & 3 MARK**

**1. What is logic circuit?**

- ✓ Logic circuit is an elementary building block.
- ✓ It is a circuit with one output and one or more inputs.
- ✓ logic gate takes one of the two binary conditions low (0) or high (1), represented by different voltage levels

**12. List the fundamental logical gates?**

There are three fundamental logic gates namely, AND, OR and NOT. Also we have other logic gates like NAND, NOR, XOR and XNOR.

**3. Why NAND and NOR gates are called as universal gates?**

NAND and NOR gates are called the universal gates, because the fundamental logic gates can be realized through them

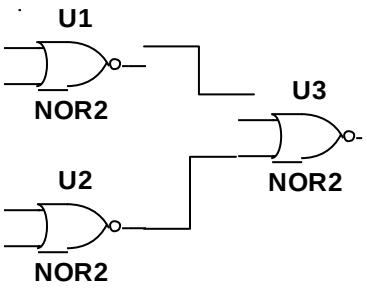
**4. How AND gate can be realized using NOR gate?**

**a**

0

b

1




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

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

(According to De-Morgan's theorem) $= A.B$ (AND Gate Output)

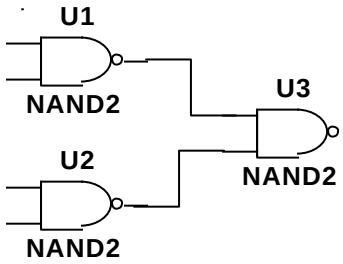
**5. How OR gate can be realized using NAND gate?**

A

0

B

1




Here

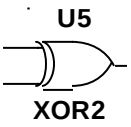
$= \overline{\bar{A}.\bar{B}}$

$= \bar{\bar{A}} \cdot \bar{\bar{B}}$

= A . B

= A+B (OR Gate output)

**6. Give the truth table of XOR gates for two inputs.**




C=A'B+AB'

| Input | | output |
|---|---|---|
| A | B | c |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |