UNIT-23 DIGITAL ELECTRONICS

MULTIPLE CHOICE QUESTIONS

1. The voltage level, typically associated with a 'low' state in digital electronics, is:
   (a) -5 volts
   (b) 0 volts
   (c) +5 volts
   (d) +10 volts

2. In binary representation, the correspondence of '0' in digital electronics is:
   (a) Low state
   (b) High state
   (c) Open circuit
   (d) Closed circuit

3. The primary purpose of a truth table in digital electronics is to:
   (a) Determine input voltage
   (b) Measure circuit resistance
   (c) Analyze output states based on input combinations
   (d) Calculate circuit power

4. Which logic gate combination produces an output of '1' when at least one input is '1'?
   (a) AND
   (b) OR
   (c) XOR
   (d) NOT

5. In a circuit with a 2-input OR gate, the status of the lamp if either switch is closed
   (a) OFF
   (b) ON
   (c) Blinking
   (d) Flickering

6. The behavior of a 2-input AND gate, when both switches are closed, the Lamp is
   (a) OFF
   (b) ON
   (c) blinking
   (d) flickering

7. In a 3-input OR gate, if all inputs are '0' so the output will be:
   (a) 1
   (b) 0
   (c) Undefined
   (d) Both A and B

8. If the input is '1', the output of a NOT gate will be:
   (a) 1
   (b) 0
   (c) Undefined
   (d) Both A and B

9. In a 2-input XOR gate, when both inputs are' 1', then the output will be
   (a) 1
   (b) 0
   (c) Undefined
   (d) Both A and B

10. Which combination of logic gates is equivalent to an XOR gate?
    (a) AND+ OR
    (b) NOT+ NOR
    (c) OR+ NAND
    (d) AND+ NAND

EXAM PRACTICE MCQs

1 What are the basic gates in the MOS logic family?

(a) NAND and NOR (b) AND and OR

(c) NAND and OR (d) AND and NOR

2 The universal gate is _____

(a) NAND gate (b) OR gate

(c) AND gate (d) NOT gate

3 The inverter is _____

(a) NOT gate (b) OR gate

(c) AND gate (d) None of the above

4 Identify the logic gate

(a) AND gate

(b) OR gate

(c) NAND gate

(d) NOR gate

5 The truth table for a two-input logic gate is as given below

$Y = A \cdot B$		
A	**B**	**Y**
0	**0**	**0**
0	**1**	**0**
1	**0**	**0**
1	**1**	**1**

Then the logic gate is

(a) NAND gate **(b) AND gate**

(c) OR gate (d) NOR gate

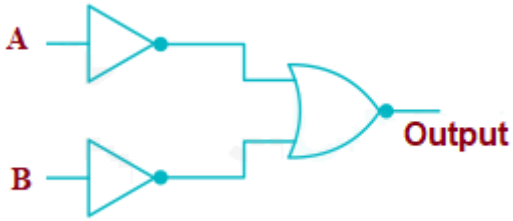
6 The truth table for a two-input logic gate is as given below

$Y = A + B$		
A	**B**	**Y**
0	**0**	**0**
0	**1**	**1**
1	**0**	**1**
1	**1**	**1**

(a) NAND gate (b) AND gate

(c) OR gate (d) NOR gate

7 Which logic gate is equivalent to these combinations of logic gates



(a) NOR
(c) AND
(b) NAND
(d) OR

8 Which one is the Universal Gate?

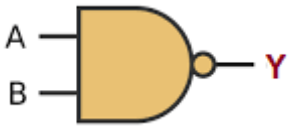
(a) OR gate
(c) NOR gate
(b) EX-OR gate
(d) AND gate

Hint:
A Universal Gate is a gate by which every other gate can be realized.
AND, OR, NOT, etc., are basic gates.
NAND, NOR are the universal gates.

9 When both the input signals A and B of the NOR & NAND gate are connected together, The output of the resultant circuit will be equivalent to

(a) OR
(a) NOT
(a) AND
(a) None of the above

10 Identify the logic gate.



(a) OR gate
(c) NOT gate
(b) AND gate
(d) NAND gate

11 The basic gates are:

(a) AND, NOR, and NOT gates
(b) AND, OR, and NOT gate
(c) AND and NOT gate
(d) OR and NOT gate

12 The logic gating function in DTL is performed by:

(a) Diode
(c) Transformer
(b) Inductor
(d) Transistor

13 In Boolean algebra, the bar sign (-) indicates_____?

(c) OR operation
(c) NOT operation
(c) AND operation
(c) None of the above

14 When an input signal 1 is applied to a NOT gate, the output is _____?

(a) 0
(c) Either 0 & 1
(b) 1
(d) ∞

15 If A = 1 and B = 0, then in terms of Boolean algebra, A + $\overline{B}$ =

(a) B
(c) A
(b) $\overline{A}$
(d) 0