EE/EC/IN **Batch : Hinglish**

Subject : Digital Electronics

DPP - 02

Chapter : Boolean Theorems and GATES

Topic : Boolean Theorems and Basics of Gates (Part-2)

[MCQ] ★☆☆

1. Which of the following is true?

(a) We can use '1' as enable input for OR gate

(b) We can use '0' as enable input for AND gate

(c) '0' as well as '1' can be used as enable input for XNOR gate

(d) None of the these

[MCQ] ★★☆

2. Which of the following relation is true?

(a) $A \oplus \bar{B} = \bar{A} \odot B$

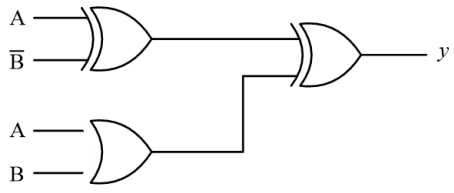
(b) $\overline{A \oplus \bar{B}} = A \odot B$

(c) $\overline{\bar{A} \odot \bar{B}} = A \oplus B$

(d) $\overline{\bar{A} \oplus \bar{B}} = A \oplus B$

[MCQ] ★★☆

3. A logical circuit is as given below:



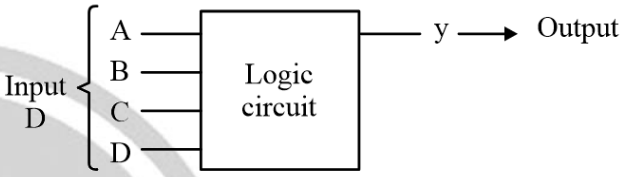
Output y will be

(a) $\bar{A} + B$ (b) $\bar{A} + \bar{B}$

(c) $A\bar{B}$ (d) $A + B$

[MSQ]

4. A logic circuit has 4-input & 1-output line as shown:



Output y is '1' wherever no. of zeroes on input side are odd, then output y can be expressed as:

(a) $A \odot B \odot C \odot D$

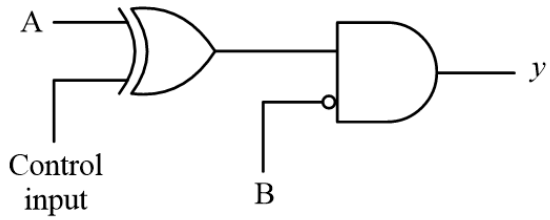
(b) $\overline{A \odot B \odot C} \odot D$

(c) $\overline{A \oplus B} \oplus C \oplus \bar{D}$

(d) None of these

[MCQ]

5. A logic circuit is as given below:



Which of the following is true?

(a) Output y is $\bar{A}B$ if control input = 0

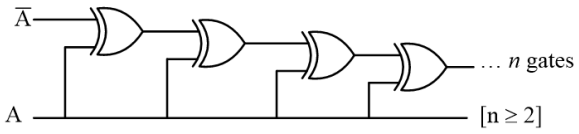
(b) Output y is $\overline{A + B}$ if control input = 1

(c) Output y is $\overline{A \cdot B}$ if control input = 0

(d) Output y is $\overline{\bar{A} \cdot B}$ if control input = 1

[MCQ]

6. A logic circuit is as given below:



Which of the following is true?

(a) Output is $\bar{A}$ if n is even

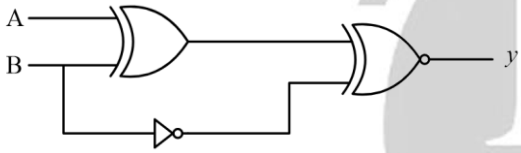
(b) Output is A if n is even

(c) Output is $\bar{A}$ if n is odd

(d) Output is A if n is odd

[MCQ] ★★☆

7. A logical circuit is as given below:



Output *y* is

(a) A (b) $\bar{B}$

(c) $\bar{A}$ (d) B

[NAT] ★★★

8. A logical expression is given as:

$f(A,B,C,D) = \bar{A} + AB[ABC + \bar{B}C + AB\bar{C} + C\bar{D}]$

then minimum number of 2-input NAND gate require to implement above logic function will be _____ .

[MCQ] ★☆☆

9. A logical expression is given as:

$f(A, B, C) = (\bar{A} + B)(A + \bar{B})$, minimum number of 2-input NAND gate require to implement above logical function is _____ .

[NAT] ★★☆

10. A logical expression is given as:

$f(A, B, C) = \bar{A} + ABC$, then minimum number of 2-input NAND gate require to implement above logical function is _____ .

[NAT] ★★☆

11. A logical function is given as:

$f(A, B) = A \oplus A\bar{B}$, If we implement this logical function using 2-input NAND gate then, minimum number of NAND gate require is _____ .

Answer Key

1. (c)
2. (c)
3. (b)
4. (b,c)
5. (b)
6. (a)
7. (a)
8. (2)
9. (5)
10. (2)
11. (2)