

WEEKLY TEST - 01

Digital Logic
Logic Gates

Maximum Marks 20

Q.1 to 6 Carry ONE Mark Each

[MCQ]

1. The number of boolean functions that can be generated by n variables is equal to

(a) $2^{2^{n-1}}$ (b) 2^{2^n}
(c) 2^{n-1} (d) 2^n

[MCQ]

2. The logical expression $y = A + \bar{A}B$ is equivalent to

(a) $y = AB$
(b) $y = \bar{A}B$
(c) $y = \bar{A} + B$
(d) $y = A + B$

[MCQ]

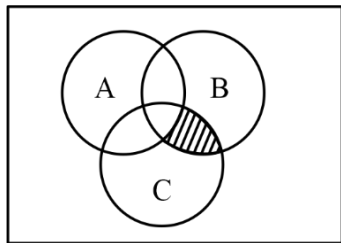
3. The Boolean expression

$(X + Y)(X + \bar{Y}) + \overline{(\bar{X}\bar{Y})} + \bar{X}$ simplifies to

(a) X (b) Y
(c) XY (d) $X+Y$

[MCQ]

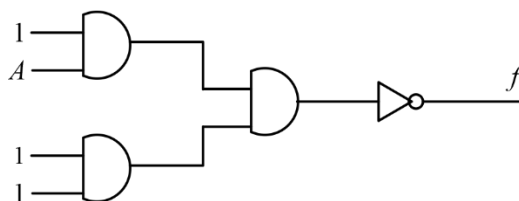
4. The shaded portion in the Venn diagram shown in the figure represents the Boolean function



(a) $\bar{A}BC$ (b) $AB\bar{C}$
(c) ABC (d) $A\bar{B}C$

[MCQ]

5. For the given logic circuit the expression implemented at the output f is



(a) 1 (b) 0
(c) A (d) \bar{A}

[MCQ]

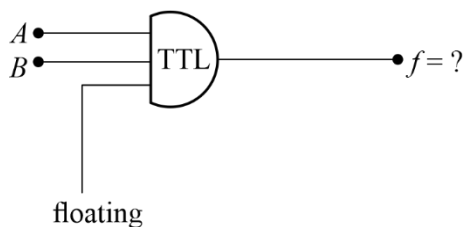
6. The complete set of only those Logic Gates designated as Universal Gates is

(a) NOT, OR and AND Gates
(b) XNOR, NOR and NAND Gates
(c) NOR and NAND Gates
(d) XOR, NOR and NAND Gates

Q.7 to 13 Carry TWO Mark Each

[MCQ]

7.

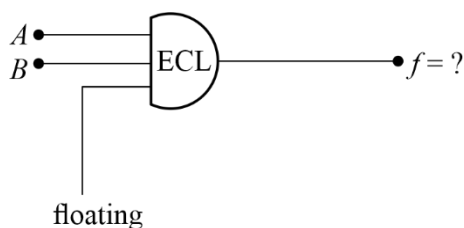


Find expression of f ?

- (a) AB (b) 1
(c) $A + B$ (d) \overline{AB}

[MCQ]

8.

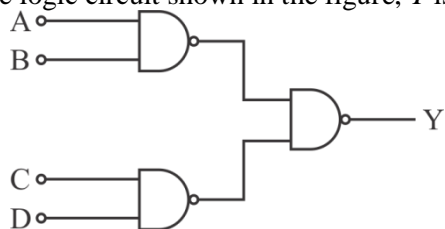


Find expression of f ?

- (a) 0 (b) 1
(c) AB (d) \overline{AB}

[MCQ]

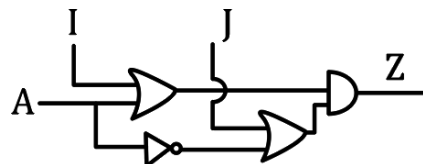
9. In the logic circuit shown in the figure, Y is given by



- (a) $Y = ABCD$
(b) $Y = (A + B)(C + D)$
(c) $Y = A + B + C + D$
(d) $Y = AB + CD$

[MCQ]

10. A simple logic circuit is shown below, if the output Z is given as $Z = \bar{A} + B$. The possible value of I , and J can be?

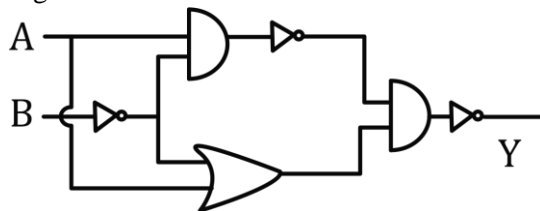


- (a) $I=B, J=1$ (b) $I=1, J=1$

- (c) $I=1, J=B$ (d) $I=A, J=1$

[MCQ]

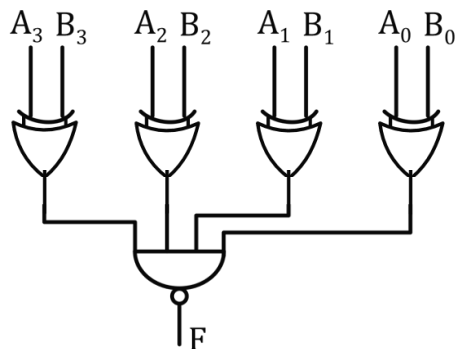
11. Determine the logical expression of Y for the given logic circuit.



- (a) NAND (b) XOR
(c) XNOR (d) NOR

[MCQ]

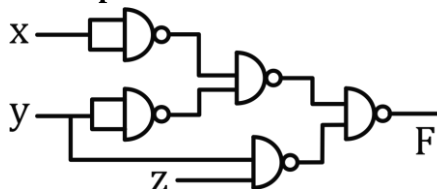
12. If A and B are inputs and F is the output. The value of A and B for $F=0$ would be?



- (a) 1010, 1010 (b) 0101, 0101
(c) 0010, 1101 (d) 0010, 1011

[MCQ]

13. The implemented function F would be



- (a) $\bar{X}\bar{Y} + YZ$ (b) $Y + \bar{X}\bar{Y}Z$
(c) $XY + \bar{Y}\bar{Z}$ (d) $X\bar{Y} + \bar{Y}\bar{Z}$

Answer Key

1. (b)
2. (d)
3. (a)
4. (a)
5. (d)
6. (c)

7. (a)
8. (a)
9. (d)
10. (c)
11. (b)
12. (c)
13. (a)



For more questions, kindly visit the library section: Link for web: <https://smart.link/sdfez8ejd80if>



PW Mobile APP: <https://smart.link/7wwosivoicgd4>