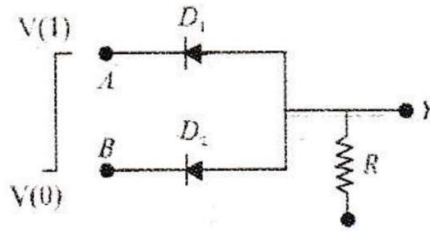


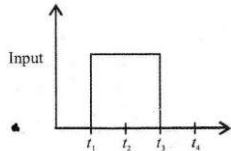
Physics Worksheet-3 : Semiconductors-3

1. The circuit below represents a

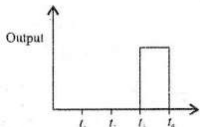
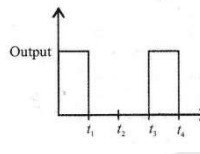
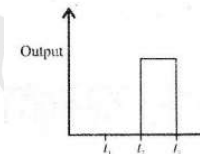
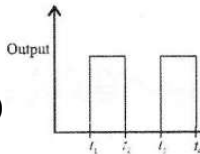
- (A) OR gate
- (B) AND gate
- (C) NOR gate
- (D) NAND gate



2. If the following input voltage is passed through a NOT gate.

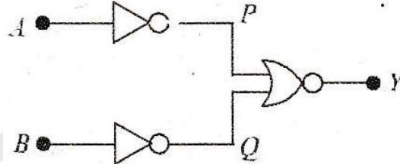


Which one of the following is the output

- (A) 
- (B) 
- (C) 
- (D) 

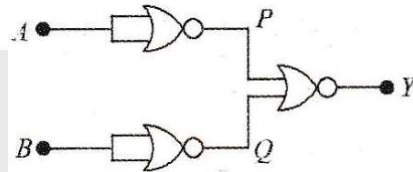
3. In the following circuit $Y = 1$ for A and B respectively equal to

- (A) 0, 0
- (B) 0, 1
- (C) 1, 0
- (D) 1, 1



4. The following circuit exclusively made of NOR gates performs the logic operation of

- (A) AND
- (B) OR
- (C) EX-OR
- (D) NAND

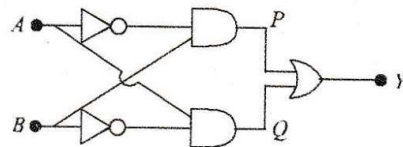


5. The minimum number of NAND gates required to form NOT, OR, and AND gates respectively are

- (A) 1, 2, 3
- (B) 1, 3, 2
- (C) 2, 1, 3
- (D) 3, 2, 1

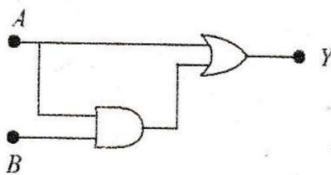
6. The logic operation of the following circuit gives

- (A) AND
- (B) NAND
- (C) NOR
- (D) XOR



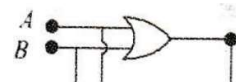
7. Which of the following is the output of the combination of gates shown in figure?

- (A) $A + A \cdot B$
- (B) $A + A + A$
- (C) $A \cdot A \cdot B$
- (D) $A \cdot A + B$



8. Name the gate represented by the following circuit

- (A) OR gate



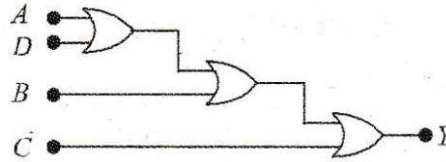
- (C) AND gate
(D) NAND gate

9. Identify the logic gate from the following truth table.

(A) AND	A	B	Y
(B) OR	0	0	0
(C) NAND	0	1	1
(D) XOR	1	0	1
	1	1	0

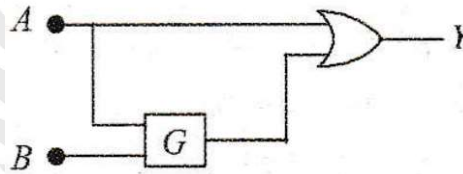
10. What is the Boolean equation of the network in figure?

- (A) ABCD
(B) A + BCD
(C) A + B + C + D
(D) AB + CD



11. Identify the logic gate G in the combination of gates shown in figure. The truth table is shown here

A	B	Y
0	0	0
0	1	0
1	0	1
1	1	1



- (A) OR gate (B) AND gate (C) NOT gate (D) XOR gate

12. If A=1 and B=0, then $A \cdot A + B$ in the Boolean expression is equal to

- (A) B (B) A · B (C) A (D) B · B

13. The following truth table

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

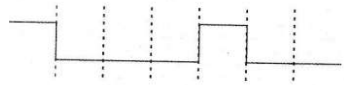
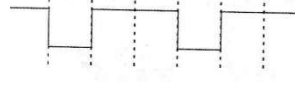
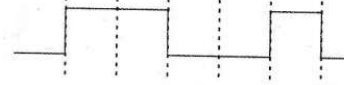
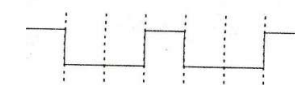
is for

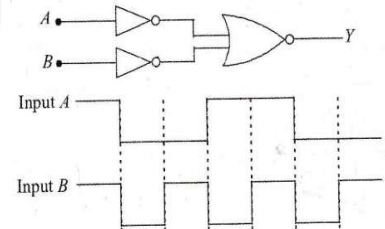
- (A) AND gate (B) OR gate (C) NAND gate (D) NOT gate

14. Which of the following is not correct?

- (A) $\overline{\overline{A \cdot B}} = A + B$ (B) $\overline{\overline{A} + \overline{B}} = A \cdot B$ (C) $\overline{(\overline{A \cdot B}) \cdot (\overline{A \cdot B})} = AB + AB$ (D) $\overline{1} + \overline{1} = 1$

15. The logic circuit shown below has the input waveforms 'A' and 'B' as shown. Pick out the correct output waveform.

- (A)  (B) 
(C)  (D) 



Physics Worksheet-3 : Semiconductors-3

1-B	2-B	3-D	4-A	5-B	6-D	7-A	8-B	9-D	10-C	11-B	12-C	13-C	14-D	15-A
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