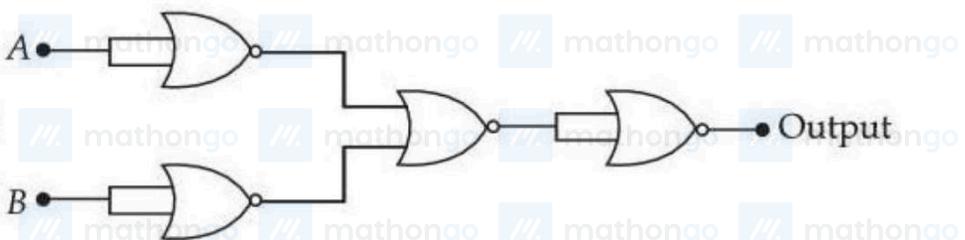


Questions with Answer Keys

Q1. 21 January Shift 1

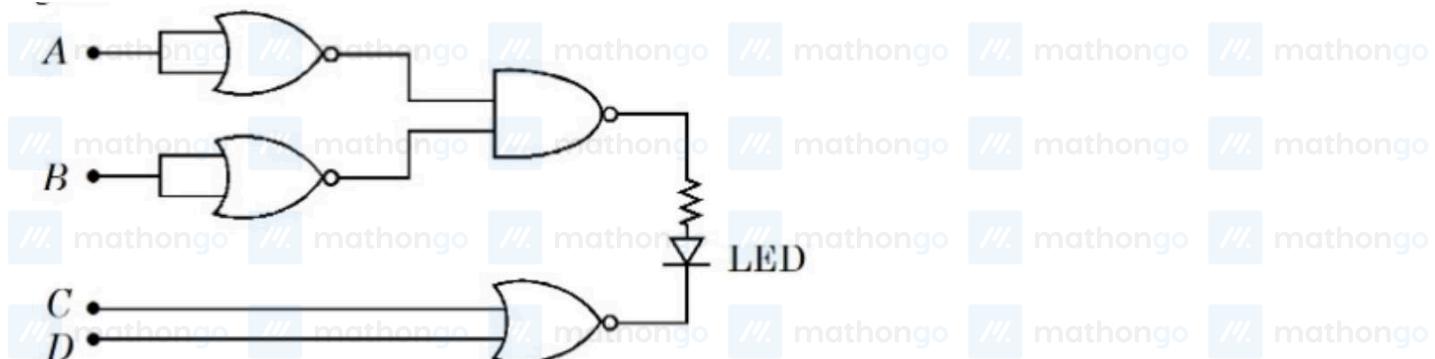


The given circuit works as :

- (1) AND gate (2) NAND gate (3) NOR gate (4) OR gate

Q2. 22 January Shift 1

Find the correct combination of A, B, C and D inputs which can cause the LED to glow.

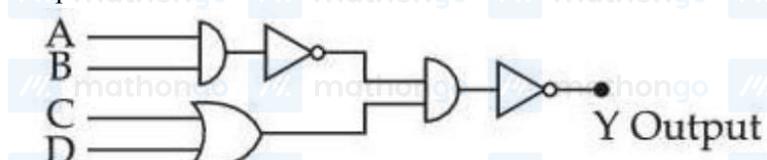


- (1) 1101 (2) 0011 (3) 1000 (4) 0100

Q3. 22 January Shift 2

The correct truth table for the given input data of the following logic gate is :

Inputs



	A	B	C	D	Y
1	1	0	1	0	0
0	0	1	1	0	0
1	0	1	0	1	1
1	1	1	1	1	1

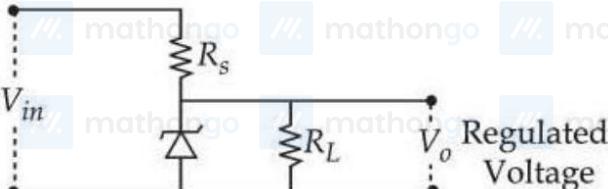
	A	B	C	D	Y
1	1	0	1	1	1
0	0	1	1	0	0
1	0	1	0	0	0
1	1	1	1	1	1

	A	B	C	D	Y
1	1	0	1	0	0
0	0	1	1	1	1
1	0	1	0	1	1
1	1	1	1	1	1

	A	B	C	D	Y
1	1	0	1	1	1
0	0	1	1	0	0
1	0	1	0	0	1
1	1	1	1	0	0

Q4. 23 January Shift 1

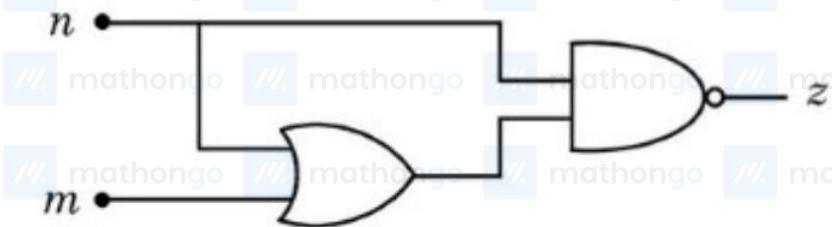
The following diagram shows a Zener diode as a voltage regulator. The Zener diode is rated at $V_z = 5$ V and the desired current in load is 5 mA. The unregulated voltage source can supply upto 25 V. Considering the Zener diode can withstand four times of the load current, the value of resistor R_S (shown in circuit) should be ____ Ω .



- (1) 100 (2) 1000 (3) 10 (4) 4000

Q5. 23 January Shift 2

For the given logic gate circuit, which of the following is the correct truth table?



(1)	n	m	z	(2)	n	m	z	(3)	n	m	z	(4)	n	m	z
	0	0	0		0	0	1		0	0	1		0	0	1
	0	1	1		0	1	0		0	1	0		0	1	1
	1	1	0		1	1	1		1	1	0		1	1	0
	1	0	1		1	0	0		1	0	0		1	0	0

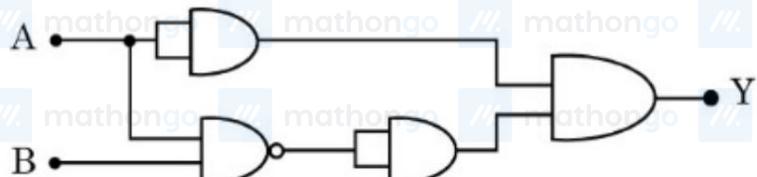
Q6. 24 January Shift 1

A voltage regulating circuit consisting of Zener diode, having break-down voltage of 10 V and maximum power dissipation of 0.4 W, is operated at 15 V. The approximate value of protective resistance in this circuit is ____ Ω .

Questions with Answer Keys

Q7. 24 January Shift 2

Identify the correct truth table of the given logic circuit.



(1)	A	B	Y
0	0	1	1
0	1	0	0
1	0	1	0
1	1	0	1

(2)	A	B	Y
0	0	1	1
0	1	0	0
1	0	1	1
1	1	0	0

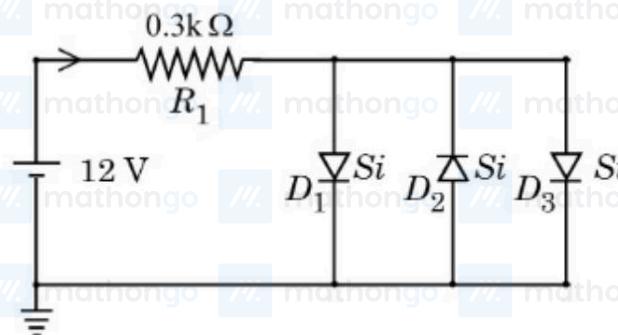
(3)	A	B	Y
0	0	0	0
0	1	1	1
1	0	1	1
1	1	0	0

(4)	A	B	Y
0	0	0	0
0	1	0	0
1	0	1	1
1	1	0	0

Q8. 28 January Shift 1

Assuming in forward bias condition there is a voltage drop of 0.7 V across a silicon diode, the current through diode D_1 in the circuit is ____ mA.

(Assume all diodes in the given circuit are identical)



(1) 17.6

(2) 18.8

(3) 11.7

(4) 20.15

Q9. 28 January Shift 2

Two p-n junction diodes D_1 and D_2 are connected as shown in figure. A and B are input signals and C is the output. The given circuit will function as a ____.



(1) NOR Gate

(2) NAND Gate

(3) OR Gate

(4) AND Gate

ANSWER KEYS