OBSERVATION:

Observation Table:

Inputs		Output	Remarks
A	**B**	**Y**	**LED is ON/OFF**
0	0		
0	1		
1	0		
1	1		

RESULT:

The truth table shows that for the OR gate, the output is low only if both the inputs are low.

CONCLUSION:

The logic operation of OR gate has been designed and its truth table has been verified..

SOURCES OF ERROR:

1. Error may be due to the carelessness of instrument.
2. The connection may not be tight.
3. The supplied diode may be faulty.
4. Error may be due to the resistance of connecting wire.

PRECAUTION:

1. The circuit should be properly connected.
2. The current in the circuit should not be suddenly increased.
3. Suitable voltage and current should be applied.
4. Connected wire should be uniform, low resistivity like copper, etc.
5. Reading should be noted carefully.

PROCEDURE:

For AND gate:

1. Connect the circuit as in figure- with two different inputs and a common output.
2. When input A is at 0V, the D_1 is forward biased and hence conducts. The supply voltage drops across the resistor and hence the output (across LED) is low.
3. Similarly, when input B is at 0V, the D_2 is forward biased and hence conducts. The supply voltage drops across the resistor and hence the output (across LED) is low.
4. When input A and B are at 0V, both the diodes conduct. The supply voltage drops across the resistor and hence the output (across LED) is low.
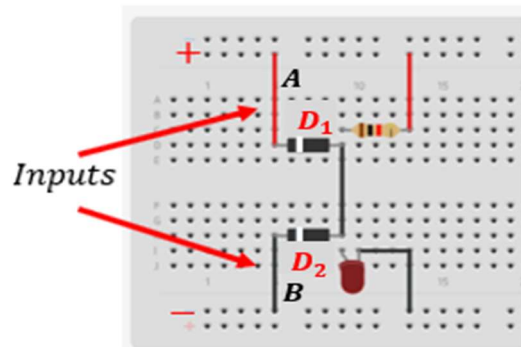5. When both the inputs are at +V, both diodes are in reverse biased and hence do not conduct. No voltage drops across the resistor. In this case, the output (across LED) is high.

Fig: Circuit diagram of AND gate