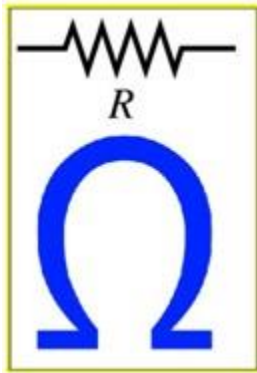**Resistance Formula**

Resistance is the measure of opposition applied by any object to the flow of electric current. A resistor is an electronic constituent that is used in the circuit with the purpose of offering that specific amount of resistance.

The resistance of any object is computed making use of the formula:

$$R = \frac{V}{I}$$

In this case,
v = Voltage across its ends
I = Current flowing through it

If the resistance's are linked in series, the series resistance is articulated as-

$$R_s = R_1 + R_2 + R_3 + \ldots + R_n$$

If resistance are connected in parallel, the parallel resistance is given by

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \ldots + \frac{1}{R_n}$$

Where, R_1, R_2, R_3 ...... R_n are the given resistors. Resistance is measured in ohms (Ω).

Resistance Formula is used to compute the resistance across any given number of resistors in the circuit. It can similarly be made use of to compute the resistance in any given object.

Resistance Solved Examples

Below are problems based on resistance which may be helpful for you.

Problem 1: Compute the resistance offered by the body if 2mA of current is flowing having a potential difference of 2V?
Answer:

Known:

I (Current) = 2mA,
V (Potential difference) = 2 V

$$The\ resistance\ is\ given\ by\ R = \frac{V}{I} = \frac{2}{2 \times 10^{-3}} = 1000\Omega$$

Problem 2: Compute the resistance if 5 Ω and 2 Ω are connected in parallel.
Answer:

Known:

Resistance

$R_1 = 5\ \Omega$,

$R_2 = 2\ \Omega$

The parallel resistance is articulated as

$$\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2}$$

$$R_p = \frac{R_1 R_2}{R_1 + R_2} = \frac{5 \times 2}{5 + 2} = 1.428\Omega$$