Eletricity

Formulas

Potential Difference (V)

1. Potential Difference = Work Done/ Quantity Of Charge Moved

V= W/ Q

1 volt (V) = 1 joule (J) / 1 coulomb (C)

2. Potential Difference= Resistance x Current

V= R x I

1 volt (V) = 1 ohm (R) / 1 amphere (I)

Current (I)

Current= Quantity Of Charge Moved/ Time Taken

I= Q/ t

1 amphere (A)= 1 coulomb (C) / 1 second (s)

1 mA= 1/ 1000 A

Resistance (R)

Resistance= Potential Difference/ Current

R= V/ I

1 ohm (R) = 1 volt (V) / 1 amphere (A)

Resistivity (p)

Resistivity = Resistance x Area Of Cross Section/ Length Of Conductor

p= R x A/ l

1 ohm m (p) = ohm (R) X (metre)square (A) / metre (l)

Resistance In Series (R)

Resistance= Resistance 1 + Resistance 2 + Resiatance 3 + …

R (ohm)= R 1 + R 2 + R 3 + …

Resistance In Parallel (R)

1/ Resistance= 1/ Resiatance 1 + 1/Resistance 2 + …

1/ R (ohm)= 1/ R 1 =+ 1/ R2 + …

Electric Power (P)

1. Power= Work Done/ Time Taken

P= W/ T

1 watt (P)= 1 joule (W) / 1 secound (t)

1 kW= 1000 W

2. Power= Potential Difference x Current

P= V x I

1 watt (W) = 1 volt (V) x 1 amphere (A)

3. Power= Potential Difference (square)/ Resistance

P= V (square) / R

1 watt (P)= 1 volt (square) (V) / 1 ohm (R)

4. Power= Current (square) x Resistance

P= I (square) x R

1 watt (P) = 1 amphere (square) (I) x 1 ohm (R)

Electric Energy (E)

Electric Energy= Power x Time

E= P x t

1 kWh (E) = 1 watt (P) x 1 hour (t)

Heating Energy (H)

Heat Produced= Current (square) x Resistance x time

H= I (square) x R x t

1 joule (H) = 1 amphere (square) (I) x 1 ohm (R) x 1 secound (t)