Ans 7

① Temperature-coefficient of resistance :-)

Let a metallic conductor having a resistance of R_0 at 0°C be heated to t°C & let its resistance at this temperature be R_t. Then considering normal ranges of temperature, it is found that the increase in resistance

$\Delta R = R_t - R_0$ depends

$R_t - R_0 \propto R_0 \times t$

$R_t - R_0 = \alpha R_0 t$ ——— (1)

$\alpha = \frac{R_t - R_0}{R_0 \times t} = \frac{\Delta R}{R_0 \times t}$

$R_t = R_0 (1 + \alpha t)$

$R_t = R_0 (1 \pm \alpha t)$.

② Resistance :-)

Resistance may be defined as that property of a substance which opposes the flow of an electric current through it.

The practical as well as M.K.S. unit of resistance is ohm which is

defined as that resistance between two points of a conductor when a potential difference of one volt, the conductor not being a source of an emf

(3) Calorie :- The calorie is a unit of energy widely used in nutrition. The small calorie or gram calorie is the amount of heat energy needed to raise the temperature of one gram of water by one degree celsius.

(4) Electrical power :- Electric power is the rate, per unit time, at which electrical energy is transferred by an electric circuit. The SI unit of power is the watt, one joule per second. electric power is usually produced by electric generators, but can also be supplied by sources such as electric batteries.

(5) Resistivity :- Resistivity, electrical resistance of a conductor of unit cross-sectional area and unit length. A characteristic property of each material, resistivity is useful in comparing various materials on the

basis of their ability to conduct
electric current.