Extra Question

3. Current Electricity

Q. 1 What is an electric circuit?

Ans- A continuous path consisting of conducting wires, a switch or a plug key and other resistances, between the terminals of a battery or a cell along which an electric current flows is an electric circuit.

Q. 2 What safety measures will you take while using electricity.

Ans- 1) Every circuit should have electric fuse in proper working condition.

2) Periodically insulation of wires should be checked.

3) Electric appliances should have proper earthing.

4) Many electric appliances having high power should not be connected in same circuit.

5) With wet hands, electric appliances should never be handled.

Q. 3 The filament of an electric bulb has resistance of 600Ω.If a potential difference of 240v, is applied across, calculate the current flowing through it.

Ans- solution – R =600Ω, V= 240v.

By ohm's law, I = $\frac{V}{R}$

= $\frac{240}{600}$ = 0.4 A.

Q. 4 How will you prove that the unit of resistivity is Ω m?

Ans.-R = $\frac{\rho L}{A}$

R = Resistance (Ω)

∴ ρ = $\frac{RA}{L}$ ρ = Resistcity

∴ ρ = $\frac{\Omega m^2}{L}$

L = Length of conductor (m)

∴ ρ = Ωm

A = Area of cross section of the conductor (m^2)

Q. 5 Why is a fuse always connected in series?

Ans- 1) Fuse stops the flow of excess of current, which prevents the damage to circuits and appliances. 2) The fuse is connected in series, so when current is passing through appliances, it passes through fuse.