SACHDEVA GLOBAL SCHOOL

CLASS - X	Physics	Worksheet -1	Electricity

Numericals

1. When a 4V battery is connected across an unknown resistor there is a current of 100 mA in the circuit. The value of the resistance of the resister is:
   a) 4 Ω
   b) 40 Ω
   c) 400 Ω
   d) 0.4 Ω
2. a) Calculate the energy transferred when 2 A current flows through a 10 Ω resistor for 30 minutes.
   b) Calculate the amount of charge that would flow in one hour through the element of an electric iron drawing a current of 0.4 amps
3. Two resistances of 4 Ω and 8 Ω are connected in parallel. What would be the combined resistance of the system?
4. Two identical resistors each of resistance 2 Ohm are connected in turn (1) in series (2) in parallel to a battery of 12 V. Calculate the ratio of power consumed in two cases.
5. (i) A 100 W electric bulb is connected to 220 V mains power supply. Calculate the strength of the electric current passing through the bulb.
   (ii) If the same bulb is taken to U.S.A where the main power supply is 110 V, how much electric current will pass through the bulb when connected to mains?
6. Calculate the resistance of 2 km long copper wire of radius 2 mm. (Resistivity of copper = 1.72×10^{-8})
7. A wire of length 3 m and area of cross-section 1.7×10^{-6} m^2 has a resistance 3×10^{-2} ohm.
   a. What is the formula for resistivity of the wire and what is the unit of it
   b. Calculate the resistivity of the wire
8. Two electric lamps of 100W and 25W respectively are connected in parallel to a supply voltage of 200V. Calculate the total current flowing through the circuit.
9. A cylindrical conductor of length 1 and uniform area of cross section A has resistance R. Another conductor of the same material and resistance R has length 21. What will be its area of cross section?
10. A current of 5A passes through a 2ohm resistor for 30 minutes. Calculate the electrical energy transferred.