SARALA BIRLA PUBLIC SCHOOL

Birla Knowledge City, Mahilong, Ranchi

CLASS-X (2020-21)

Sub: PHYSICS

Assignment-3

Assignment 3 physics class 10

1. What is electrical power? Write its unit.

2. You take two resistors of resistance 2R and 3R and connect them in parallel in an electric circuit. Calculate the ratio of the electrical power consumed by 2R and 3R?

3. Define resistance and resistivity and also give the relation between them.

4. A bulb is rated at 330V- 110W. What do you think is its resistance? Three such bulb glows for 5hrs in a day. What is the energy consumed? Calculate the cost in rupees if the rate is ₹7 per unit?

5. Calculate the resistance of 2 m long copper wire of radius 2 mm. (Resistivity of copper = 1.72 x 1 0^{-8})

6. A 250 watt electric bulb is lighted for 5 hours daily and four 6 watt bulbs are lighted for 4.5 hours daily. Calculate the energy consumed (in kWh) in the month of February.

7. A torch bulb is rated at 3V and 600mA. Calculate it's

(a) Power b) Resistance c) Energy consumed if it is lighted for 4 Hrs.

8. What is Joule's heating effect? List its four applications in daily life.

9. A piece of wire having a resistance R is cut into five equal parts.

(i) How will the resistance of each part of the wire compare with the original resistance?

(ii) If the five parts of the wire are placed in parallel, how will the resistance of the combination compare with the resistance of the original wire? What will be ratio of resistance in series to that of parallel?

10. Find out the following in the electric circuit given in Figure below:

(a) Effective resistance of two 8 Ω resistors in the combination

(b) Current flowing through 4 Ω resistor

(c) Potential difference across 4 Ω resistance

(d) Power dissipated in 4 Ω resistor

(e) Difference in ammeter readings, if any.