INTERNATIONAL INDIAN SCHOOL BURAIDAH

WORKSHEET-(2025-2026)

Class -10

Subject-PHYSICS

CHAPTER: ELECTRICITY

1. A cylindrical conductor of length 'l' and uniform area of cross section 'A' has resistance 'R'. The area of cross section of another conductor of same material and same resistance but of length '2l' is

(a) $\frac{A}{2}$ (b) $\frac{3A}{2}$ (c) 2A (d)3A

2. When a 4 V battery is connected across an unknown resistor there is a current of 100 mA in the circuit. The value of the resistance of the resistor is:

(a) 4Ω (b) 40Ω (c) 400Ω (d) 0.4Ω

3. Electrical resistivity of a given metallic wire depends upon

(a) Its length. (b) Its thickness. (c) Its shape. (d) Nature of the material.

4. Two bulbs of 100 W and 40 W are connected in series. The current through the 100 W bulb is 1 A. The current through the 40 W bulb will be:

(a) 0.4 A (b) 0.6 A (c) 0.8 A (d) 1 A

5. What is the maximum resistance which can be made using five resistors each of $\frac{1}{5}\Omega$?

(a) $\frac{1}{5}\Omega$ (b)10Ω (c)5Ω (d)1Ω

6. (i) List the factors on which the resistance of a conductor in the shape of a wire depends.

(ii) Why are metals good conductors of electricity, whereas glass is a bad conductor of electricity ? Give reason.

7. Two LED bulbs of 12 W and 6 W are connected in series. If the current through 12 W bulbs is 0.06 A the current through 6 W bulb will be:[CBSE 2022 - 23]

(a) 0.04 A (b) 0.06 A (c) 0.08 A (d) 0.12 A

8. The resistance of a resistor is reduced to half of its initial value. If other parameters of the electrical circuit remain unaltered, the amount of heat produced in the resistor will become:[CBSE 2022 - 23]

(a) four times (b) two times (c) half (d) one fourth

9. In a resistive circuit if the current is increased to two times, the percentage change in the amount of heat dissipated in the circuit would be:[CBSE 2022 - 23]

(a) 400 % (b) 300 % (c) 200 % (d) 100 %

10. For verifying Ohm's law, we design an electric circuit diagram in which we show the arrangement of different circuit components. We find that with represent to the resistor, the:[CBSE 2022 - 23]

(a) ammeter is connected in parallel and the voltmeter in series.

(b) ammeter is connected in series and the voltmeter in parallel.

(c) ammeter and voltmeter are both connected in series.

11. (i) Write Joule's law of heating.

(ii) Two lamps, one rated 100 W, 220 V and the other 60 W, 220 V are connected in parallel to electric main supply.Find the current draw by two bulbs from the line, if the supply voltage is 220 V.

12. In an electrical circuit, two resistors of 2 Ω and 4 Ω are connected in series to a 6 V battery. Find the heat dissipated by the 4 Ω resistor in 5 s.

13. (a) State ohm's law. Express it mathematically.

(b) Write symbols used in electric circuits to represent:

(i) Variable resistance

(ii) Voltmeter

(c) An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, what will be the power consumed