



Class:10th

Subject- Science

Assignment

Chapter 12 (Electricity)

1. A wire of length l , made of material resistivity ρ is cut into two equal parts. The resistivity of the two parts are equal to,

- (a) ρ (b) $\rho/2$ (c) 2ρ (d) 4ρ

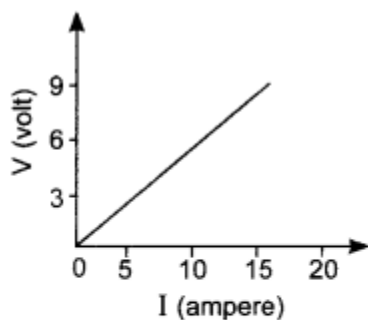
2. A battery of 10 volt carries 20,000 C of charge through a resistance of $20\ \Omega$. The work done in 10 seconds is

- (a) 2×10^3 joule (b) 2×10^5 joule (c) 2×10^4 joule (d) 2×10^2 joule

3. A boy records that 4000 joule of work is required to transfer 10 coulomb of charge between two points of a resistor of $50\ \Omega$. The current passing through it is

- (a) 2 A (b) 4 A (c) 8 A (d) 16 A

4. The resistance whose V-I graph is given below is



- (a) $\frac{5}{3}\ \Omega$ (b) $\frac{3}{5}\ \Omega$
(c) $\frac{5}{2}\ \Omega$ (d) $\frac{2}{5}\ \Omega$

5. To get $2\ \Omega$ resistance using only $6\ \Omega$ resistors, the number of them required is

- (a) 2 (b) 3 (c) 4 (d) 6

6. Two wires of same length and area made of two materials of resistivity ρ_1 and ρ_2 are connected in series to a source of potential V . The equivalent resistivity for the same area is

- (a) $\rho_1 + \rho_2$ (b) $\frac{\rho_1 \rho_2}{\rho_1 + \rho_2}$
 (c) $\frac{(\rho_1 + \rho_2)}{\rho_1 \rho_2}$ (d) $\left(\frac{|\rho_1 + \rho_2|}{2} \right)$

7. Two devices are connected between two points say A and B in parallel. The physical quantity that will remain the same between the two points is

- (a) current (b) voltage (c) resistance (d) None of these

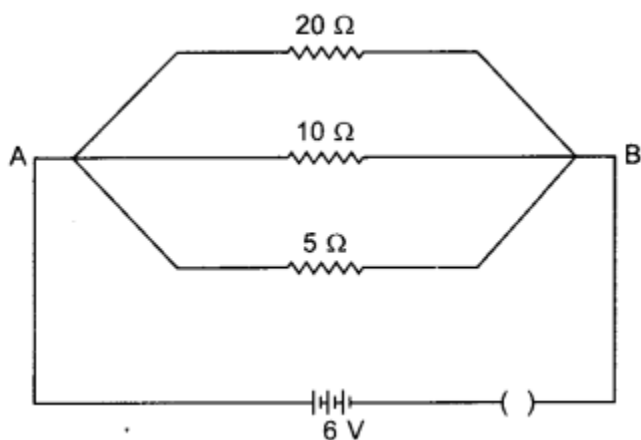
8. The least resistance obtained by using 2 Ω , 4 Ω , 1 Ω and 100 Ω is

- a) < 100 Ω (b) < 4 Ω (c) < 1 Ω (d) > 2 Ω

9. Two wires of same length and area, made of two materials of resistivity ρ_1 and ρ_2 are connected in parallel to a source of potential. The equivalent resistivity for the same length and area is

- (a) $\rho_1 + \rho_2$ (b) $\frac{\rho_1 \rho_2}{\rho_1 + \rho_2}$
 (c) $\frac{(\rho_1 + \rho_2)}{\rho_1 \rho_2}$ (d) $|\rho_1 - \rho_2|$

10. Calculate the current flows through the 10 Ω resistor in the following circuit.



- (a) 1.2 A (b) 0.6 A (c) 0.2 A (d) 2.0 A

11. Two resistors are connected in series gives an equivalent resistance of 10 Ω . When connected in parallel, gives 2.4 Ω . Then the individual resistance are

- (a) each of 5 Ω (b) 6 Ω and 4 Ω (c) 7 Ω and 4 Ω (d) 8 Ω and 2 Ω

12. If R_1 and R_2 be the resistance of the filament of 40 W and 60 W respectively operating 220 V, then

- (a) $R_1 < R_2$ (b) $R_2 < R_1$ (c) $R_1 = R_2$ (d) $R_1 \geq R_2$

13. The resistance of hot filament of the bulb is about 10 times the cold resistance. What will be the resistance of 100 W-220 V lamp, when not in use?

- (a) 48 Ω (b) 400 Ω (c) 484 Ω (d) 48.4 Ω

14. If P and V are the power and potential of device, the power consumed with a supply potential V_1 is

- (a) $\frac{V_1^2}{V^2} P$ (b) $\frac{V^2}{V_1^2} P$
(c) $\frac{V}{V_1} P$ (d) $\frac{V_1}{V} P$

15. A coil in the heater consume power P on passing current. If it is cut into halves and joined in parallel, it will consume power

- (a) P (b) $P/2$ (c) $2P$ (d) $4P$

16. A resistance of $1\text{ k}\Omega$ has a current of 0.25 A throughout it when it is connected to the terminals of a battery. What is the potential difference across the ends of a resistor?

17. Calculate the current in a circuit if 500 C of charge passes through it in 10 minutes.

18. An electric iron draws a current of 0.6 A when the voltage is 100 volt Calculate the amount of electric charge flowing through it in one hour.

19. A given length of a wire is doubled on itself and this process is repeated once again. By what factor does the resistance of the wire change?

20. A lamp draws a current of 0.5 A when it is connected to a 60 V source. What is the resistance of the lamp?