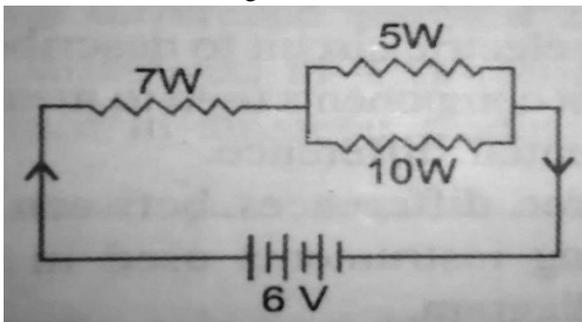


Class – X

Unit : Current Electricity

Level – I

- Q.1. A wire of resistance $10\ \Omega$ is bent in the form of a closed circle. What is the effective resistance between the two points at the ends of any diameter of the circle ?
- Q.2. Two bulbs $60\ \text{W}, 220\ \text{V}$ and $40\ \text{W}, 220\ \text{V}$ are connected in series. Which of the bulb will glow higher ?
- Q.3. Why the bulb gets fused, if it is operated at a higher potential than its power rating ?
- Q.4. You are given three bulbs of $40\ \text{W}, 60\ \text{W}$ and $100\ \text{W}$. Which of them has lowest resistance?
- Q.5. An electric bulb is rated $220\ \text{V}$ and $100\ \text{W}$. What will be the power consumed, when it is operated on $110\ \text{V}$?
- Q.6. The wattage of a bulb is $24\ \text{W}$ when it is connected a $12\ \text{V}$ battery. Calculate its effective wattage if it operates on a $6\ \text{V}$ battery (Neglect the change in resistance due to unequal heating of the filament in the two cases).
- Q.7. An electrical appliance draws a current of $0.5\ \text{A}$ when applied potential difference across it is $220\ \text{V}$. Calculate the amount of charge flowing through it in 30 minutes.
- Q.8. For the same potential difference, out of the two, a room heater of $1000\ \text{W}$ and an electric motor of $2\ \text{KW}$, which has a greater resistance ?
- Q.9. A wire of $3\ \Omega$ resistance and $15\ \text{cm}$ in length is stretched to $45\ \text{cm}$ length. Calculate (i) new cross section area, (ii) new resistance, and (iii) resistivity. Assume that wire has uniform cross section area.
- Q.10. An electric geyser rated $1500\ \text{W}, 250\ \text{V}$ is connected to a $250\ \text{V}$ line mains . Calculate : (i) the electric current drawn by it. (ii) energy consumed by it in 50 hrs. (iii) cost of energy consumed if each unit costs Rs. 6.00.
- Q.11. Two heaters rated $750\ \text{W}, 200\ \text{V}$ and $1000\ \text{W}, 200\ \text{V}$ are connected in parallel across $200\ \text{V}$ supply. Calculate the total power consumed.
- Q.12. If the radius of a current carrying conductor is halved and length remains same, how much the current through it changes ?
- Q.13. Though same current flows through the electric line wires and the filament of bulb, yet only the filament glows. Why ?
- Q.14. In a household electric circuit, different appliances are connected in parallel to one another. Give two reasons. An electrician puts a fuse of rating $5\ \text{A}$ in that part of domestic electrical circuit in which an electrical heater of rating $1.5\ \text{kW}, 220\ \text{V}$ is operating. What is likely to be happen in this case and why? What change, if any, needs to be made?
- Q.15. For the circuit shown in the diagram below, Calculate :-



- (i). the resultant resistance. (ii). The total current. (iii). The voltage across $7\ \Omega$ resistor.
- Q.16. You have four resistors of $8\ \Omega$ each. Show how would you connect these resistorsto have effective resistance of $8\ \Omega$.