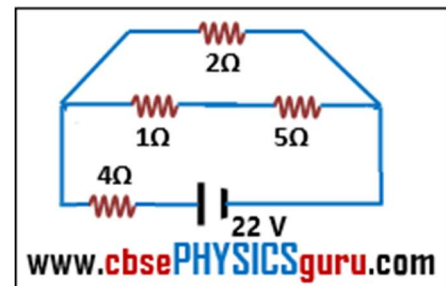
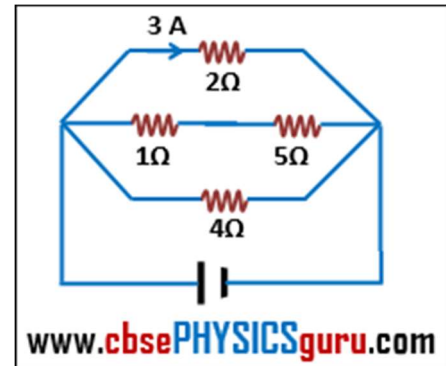


ELECTRICAL ENERGY AND POWER

- Two resistors whose value are in ratio 2:1 are connected in parallel with one cell. Then ratio of power dissipated is:
(a) 2: 1 (b) 4: 1 (c) 1: 2 (d) 1: 1
- Two bulbs of 500 W and 300 W are manufactured to operate on a 220 V line. If their resistances are R_1 and R_2 respectively, then value of R_1/R_2 is:
(a) 5/3 (b) 3/5 (c) 25/9 (d) 9/25.
- A wire when connected to 220 V mains supply has power dissipation P_1 . Now the wire is cut into two equal pieces which are connected in parallel to the same supply. Power dissipation in this case is P_2 . Then P_2/P_1 is:
(a) 1 (b) 2 (c) 3 (d) 4
- A current of 3 A flows through the $2\ \Omega$ resistor shown in the circuit. The power dissipated in $5\ \Omega$ resistor is:
(a) 1 W (b) 5 W (c) 4 W (d) 2 W.
- n identical light bulbs, each designed to draw P power from a certain voltage supply, are joined in series across that supply. The total power which they will draw is:
(a) nP (b) P/n (c) P (d) P/n^2
- An electric heating element consumes 500 W when connected to a 100 V line. If the line voltage becomes 150 V, the power consumed will be:
(a) 500 W (b) 750 W (c) 1000 W (d) 1125 W
- Five equal resistors when connected in series dissipated 5 W power. If they are connected by parallel, the power dissipated will be:
(a) 25 W (b) 50 W (c) 100 W (d) 125 W
- The total power dissipated in watts in the circuit shown in figure is:
(a) 44 (b) 54 (c) 88 (d) 96
- An electric bulb rated 500 W at 100 V is used in a circuit having a 200 V supply. The resistance that must be connected in series with the bulb, so that the bulb draws 500 W is:
(a) $10\ \Omega$ (b) $15\ \Omega$ (c) $20\ \Omega$ (d) $40\ \Omega$
- A rise of temperature of 4°C is observed in a conductor by passing a current. If the current is tripled, the rise in temperature will be:
(a) 8°C (b) 12°C (c) 16°C (d) 36°C
- Two electric bulbs marked 40 W, 220 V and 60 W, 220 V, when connected in series across same voltage supply of 220 V, the effective power is P_1 and when connected in parallel, the effective power is P_2 . Then is P_1/P_2 is:
(a) 0.12 (b) 0.18 (c) 0.24 (d) 0.36
- Two identical cells each of emf ε and internal r are connected in parallel with an external resistance R . To get maximum power developed across R , the R is:
(a) $R = r/2$ (b) $R = r$ (c) $R = r/3$ (d) $R = 2r$



13. Masses of three wires of same material are in the 1 : 3 : 5 and their lengths are in the ratio 5 : 3 : 1. If they are connected in series with a battery then the heats produced in them will be:
(a) 5 : 9 : 5 (b) 125 : 15 : 1 (c) 25 : 9 : 1 (d) 25 : 15 : 9
14. An electric bulb marked as 50 W-200 V is connected across a 100 V supply. The power consumed by the bulb is:
(a) 37.5 W (b) 25 W (c) 12.5 W (d) 10 W
15. Two electric bulbs marked as 25 W-220 V and 100 W- 220 V are connected across a 440 V supply. Which of the bulbs will fuse?
(a) 25 W (b) 100 W (c) neither (d) both