

Board – ICSE

Class – 10th

Topic – Household Electricity

1. Explain briefly the function of the following three pin plug and main switch.
2. In a three pin plug, why is the earth pin made longer and thicker than the other two pins?
3. Define electrical power. Write its mathematical expression and S.I unit.
4. What is the commercial unit of electrical energy? Write its relation with joule.
5. Explain 'power rating' of electrical appliances.
6. Write the expression of household consumption of electrical energy.
7. An electric bulb is rated 250W, 230V. What information does it convey?
8. A family uses a light bulb of 100 W, a fan of 100 W and a heater of 1000 W, each for 8 hours a day. If the cost of electricity is Rs.2 per unit, what is the expenditure for the family per day on electricity?
9. A bulb is marked 100 W, 220 V and an electrical heater is marked 2000 W, 220 V. What is the ratio between the resistances of these two devices?
10. A geyser has a label 2kW, 240V. What is the cost of using it for 30 minutes, if the cost of electricity is Rs.3 per commercial unit?
11. Which of the two wires of similar dimensions, copper or nichrome, would you use as heating element in an electrical heater. Give reasons to justify your answer.
12. An electrical kettle is rated 2.5kW, 250V. Find the cost of running the kettle for two hours at 60 paise per unit.
13. Electrical power P is given by the expression: $P = (Q \times V) / \text{time}$
 - (i) What do the symbols Q and V signify?
 - (ii) Express power in terms of current and resistance explaining the symbols used there in.
14. An electrical appliance having resistance 200ohm is operated at 200V. Calculate the energy consumed by the appliance in 5min.
15. Name the physical quantity which is measured in kW and kWh.
16. Water in an electric kettle connected to a 220V supply took 5min to reach to its boiling point. How long would it take if the supply is 200V.