CBSE TEST PAPER-02

SCIENCE & TECHNOLOGY (Class-10)

Chapter 12 : Electricity

1. Why is very less quantity of heat energy produced in the connecting wires? (1 mark)
2. Which one has more resistance 100 watt bulb or 60 watt bulb? (1 mark)
3. How much energy is given to each coulomb of charge passing through a 6V battery? (1 mark)
4. What determines the rate at which energy is delivered by a current? (1 mark)
5. What does an electric circuit mean? (1mark)
6. Name a device that help to maintain a potential difference across a conduct. (1mark)
7. Judge the equivalent resistance when the following are connected in parallel
   (a) $1\,\Omega$ and $10^6\,\Omega$ (b)$1\,\Omega$ and $10^3\,\Omega$ and $10^6\,\Omega$ (2 marks)
8. Define the term electric energy. Write an expression for the electric energy consumed in an electric circuit. (2 marks)
9. What is meant by power-rating of an appliance? A bulb is rated as 60 W, 220 V. What does it indicate? (2 marks)
10. Let the resistance of an electrical component remains constant while the potential difference across the two ends of the component decreases to half of its former value. What change will occur in the current through it. (2 marks)
11. A piece of wire is drawn by pulling it unit is length is doubled. Compare the new resistance with the original value. (2 marks)
12. State ohm's law. Express it mathematically. Define S.I. unit of resistance. (2 marks)
13. Draw a circuit diagram with a cell, an electric bulb, an ammeter and plug key. (2 marks)
14. For a heater rated at 4kW and 220V, calculate
    (a) The current (b) The resistance of the heater (c) The energy consumed in 2 hours (3marks)
15. An electric lamp of $100\ \Omega$, a toaster of resistance $50\ \Omega$, and a water filter of resistance $500\,\Omega$ are connected in parallel to a 220 V source. What is the resistance of an electric iron connected to the same source that takes as much current as all three appliances, and what is the current through it? (3 marks)
16. What are the advantages of connecting electrical devices in parallel with the battery instead of connecting them in series? (3marks)
17. How can three resistors of resistances $2\ \Omega$, $3\ \Omega$, and $6\ \Omega$ be connected to give a total resistance of (i) $4\,\Omega$ (ii)$1\ \Omega$? (3 marks)