CBSE TEST PAPER-01

CLASS - X Science (Electricity and its Effects)

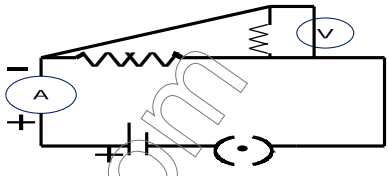
1. Which two circuit components are connected in parallel in the following circuit diagram? (1)

   (a) R_1 and R_2 only

   (b) R_1, R_2 and V

   (c) R_2 and V only

   (d) R_1 and V only



2. A metallic conductor has loosely bound electrons called free electrons. The metallic conductor is (1)

   (a) negatively charged (b) positively charged

   (c) neutral (d) Either positively charged or negatively charged

3. Which of the following expressions does not represent the electric power in the circuit? (1)

   (a) VI (b) I^2/R

   (c) V^2/R (d) $I^2 R$

4. Resistivity of a metallic wise depends on (1)

   (a) its length (b) its shape

   (c) its thickness (d) nature of material

5. If the current I through a resistor is increased by 100% the increased in power dissipation will be (assume temperature remain unchanged) (1)

   (a)100% (b) 200%

   (c) 300% (d) 400%

6. How does use of fuse wire protect electrical appliances? (2)

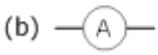
7. Calculate the resistance of an electric bulb which allows a 10A current when connected to a 220V power source? (2)

8. (i) Identify the V-I graphs for ohmic and non-ohmic materials. (2)

(ii) Give one example of each.

9. What do the following symbols represent in a circuit? (2)
Write the name and one function of each?

(a) 

(b) 

10. Two metallic wires A and B are connected in second wire A has length l and radius r, while wire B has length 2l and radius 2r. Find the ratio of total resistance of series combination and the resistance of wire A, if both the wires are of same material? (3)

11. Should the heating element of an electric iron be made of iron, silver or nichrome wire? Justify giving three reasons? (3)

12. (a) Define electric resistance of a conductor? (3)
(b)A wire of length L and resistance R is stretched so that its length is double and the area of cross section is halved. How will its
(a) resistance change (b) resistivity change?

13. Two resistor of resistance R and 2R are connected in parallel in an electric circuit. Calculate the ratio of the electric power consumed by R and 2R? (3)

14. Two wires A and B are of equal length, different cross sectional areas and made of same metal. (5)
(a) (i) Name the property which is same for both the wires,
(ii) Name the property which is different for both the wires.
(b) If the resistance of wire A is four times the resistance of wire B, calculate
(i) the ratio of the cross sectional areas of the wires and
(ii) The ratio of the radii of the wire.