11. Electricity - Board Exam Questions (1 Mark)

Practice these questions online at pschool.in/science/ncert/g10/chap-11

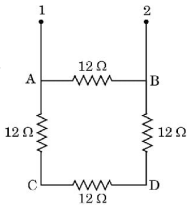
1 Mark Questions (MCQ)

1) *The correct way to connect an ammeter and a voltmeter in an electric circuit is:*
(a) Ammeter in parallel and voltmeter in series
(b) Ammeter and voltmeter both in parallel
(c) Ammeter in series and voltmeter in parallel
(d) Ammeter and voltmeter both in series

2) *An electrical appliance rated 1000 W is operated at 250 V. What current does it draw?*
(a) 0.25 A (b) 2.5 A (c) 4.0 A (d) 10 A

3) *An electric bulb is connected to a power supply of 220 V. If the current drawn by the bulb from the supply is 500 mA, the power of the bulb is:*
(a) 11 W (b) 110 W (c) 220 W (d) 1100 W

4) *Four identical resistors of 12 Ω each are connected in series to form a square ABCD as shown in the figure. The resistance of the network between the two points 1 and 2 is:*



(a) 48 Ω
(b) 36 Ω
(c) 9 Ω
(d) 6 Ω

5) *A wire of length 'l' is gradually stretched so that its length increases to 3l. If its original resistance is R, then its new resistance will be:*
(a) 3R (b) 6R (c) 9R (d) 27R

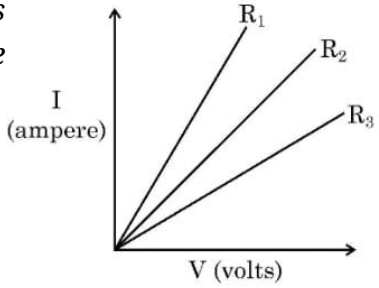
6) *A piece of wire of resistance 'R' is cut lengthwise into three identical parts. These parts are then connected in parallel. If the equivalent resistance of this combination is R', then the value of R/R' is:*
(a) 1/9 (b) 1/3 (c) 3 (d) 9

7) *An electric bulb is rated 220 V; 11 W. The resistance of its filament when it glows with a power supply of 220 V is:*
(a) 4400 Ω (b) 440 Ω (c) 400 Ω (d) 20 Ω

8) *The minimum number of identical bulbs of rating 4 V; 6 W, that can work safely with desired brightness, when connected in series with a 240 V mains supply is:*
(a) 20 (b) 40 (c) 60 (d) 80

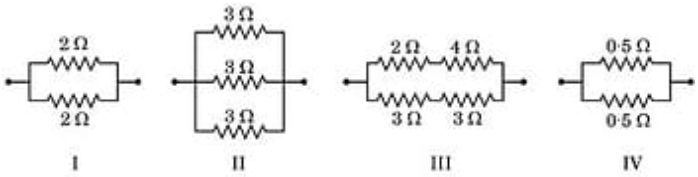
9) *The maximum resistance of a network of five identical resistors of 1/5 Ω each can be –*
(a) 1 Ω (b) 0.5 Ω (c) 0.25 Ω (d) 0.1 Ω

10) *Study the I-V graph for three resistors of resistances R_1, R_2 and R_3 and select the correct statement from the following:*
(a) $R_1 = R_2 = R_3$
(b) $R_1 > R_2 > R_3$
(c) $R_3 > R_2 > R_1$
(d) $R_2 > R_3 > R_1$



11) *In case of four wires of same material, the resistance will be minimum if the diameter and length of the wire respectively are*
(a) D/2 and L/4 (b) D/4 and 4L (c) 2D and L (d) 4D and 2L

12) *Consider the following combinations of resistors:*
The combinations having equivalent resistance 1 Ω is/are:

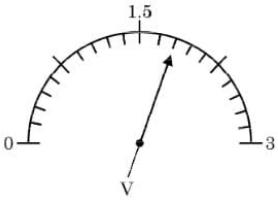


(a) I and IV (b) Only IV (c) I and II (d) I, II and III

13) *An electric iron of resistance 20 Ω draws a current of 5 A. The heat developed in the iron in 30 seconds is:*
(a) 15000 J (b) 6000 J (c) 1500 J (d) 3000 J

14) *If four identical resistors, of resistance 8 ohm, are first connected in series so as to give an effective resistance R_s, and then connected in parallel so as to give an effective resistance R_p, then the ratio R_s/R_p is*
(a) 32 (b) 2 (c) 0.5 (d) 16

15) *In the following diagram, the position of the needle is shown on the scale of a voltmeter. The least count of the voltmeter and the reading shown by it respectively are:*



(a) 0.15 V and 1.6 V (b) 0.05 V and 1.6 V
(c) 0.15 V and 1.8 V (d) 0.05 V and 1.8 V

16) *In a resistive circuit if the current is increased to two times, the percentage change in the amount of heat dissipated in the circuit would be:*
(a) 400% (b) 300% (c) 200% (d) 100%

17) *Two LED bulbs of 12W and 6W are connected in series. If the current through 12W bulb is 0.06A the current through 6W bulb will be:*
(a) 0.04A (b) 0.06A (c) 0.08A (d) 0.12A

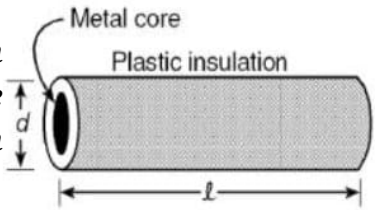
18) *The resistance of a resistor is reduced to half of its initial value. If other parameters of the electrical circuit remain unaltered, the amount of heat produced in the resistor will become:*
(a) four times (b) two times (c) half (d) one fourth

19) *The expressions that relate (i) Q, I and t and (ii) Q, V and W respectively are (Here the symbols have their usual meanings):*
(a) (i) $I = Q/t$ (ii) $W = V/Q$ (b) (i) $Q = I \times t$ (ii) $W = V \times Q$
(c) (i) $Q = I/t$ (ii) $V = W/Q$ (d) (i) $I = Q/t$ (ii) $Q = V/W$

20) *An electric kettle consumes 1 kW of electric power when operated at 220 V. The minimum rating of the fuse wire to be used for it is*
(a) 1 A (b) 2 A (c) 4 A (d) 5 A

21) *A complete circuit is left on for several minutes, causing the connecting copper wire to become hot. As the temperature of the wire increases, the electrical resistance of the wire*
(a) decreases
(b) remains the same
(c) increases
(d) increases for some time and then decreases

22) *Plastic insulation surrounds a wire having diameter d and length l as shown above. A decrease in the resistance of the wire would be produced by an increase in the*



(a) length l of the wire
(b) diameter d of the wire
(c) temperature of the wire
(d) thickness of the plastic insulation

Assertion and Reason

1) *Assertion (A): Nichrome is an alloy which is commonly used in electrical heating devices such as electric irons, toasters, etc.*
Reason (R): The resistivity of nichrome is high and its resistance decreases with increase in temperature.

2) *Assertion (A): Electrons move from lower potential to higher potential in a conductor.*
Reason (R): A dry cell maintains electric potential difference across the ends of a conductor.