QB365

Important Questions - Electricity

10th Standard CBSE

Science

Reg.No. : | | | | | | |

Time : 01:00:00 Hrs

Total Marks : 50

Section - A

1) 1 kilowatt hour (kWh) is equal to **1**

(a) 3.6×10^6J (b) 3.6×10^8J (c) 3.6×10^2J (d) 3.6×10^5J

2) Electric potential is **1**

(a) Neither scalar nor vector (b) Scalar quantity (c) Vector quantity

(d) Sometimes scalar sometimes vector

3) Ohm's law is valid only when **1**

(a) Graph between V and I is a straight line (b) Temperature increases (c) Temperature decreases

(d) Temperature remains constant.

4) Electrical resistivity of a given metallic wire depends upon **1**

(a) its length (b) its thickness (c) its shape (d) nature of the material

5) What is the maximum resistance while can be made using five resistors each of 1/5Ω. **1**

(a) 1/5Ω (b) 10Ω (c) 1/10Ω (d) 25Ω

6) If the current I through a resistor is increased by 100%, the increase in power dissipated will be **1**

(a) 100% (b) 200% (c) 300% (d) 400%

7) In an electrical circuit two resistors of 2Ω and 4Ω respectively are connected in series to a 6 V battery. The heat dissipated by the 4Ω resistor in 5s will be **1**

(a) 5 J (b) 10 J (c) 20 J (d) 30 J

8) A piece of wire of resistance R is cut into five equal parts. These parts are then connected in parallel. If the equivalent resistance of this combination is R' then the ratio R/R' is **1**

(a) 1/25 (b) 1/5 (c) 5 (d) 25

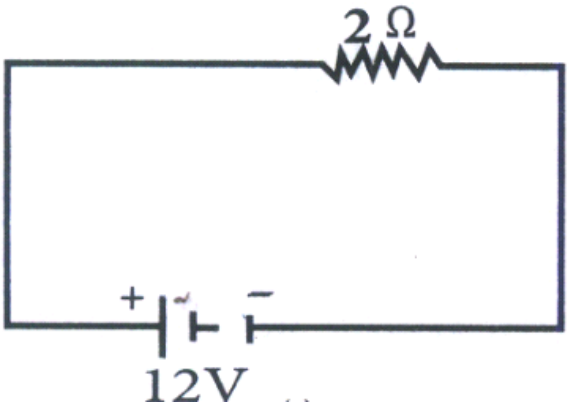
9) An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, the power consumed will be **1**

(a) 100 W (b) 75 W (c) 50 W (d) 25 W

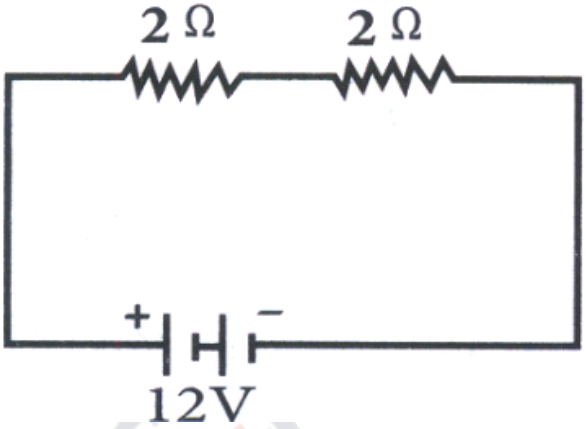
10) In the following circuits, heat produced in the resistor or combination of resistors connected to a 12 V battery will be **1**

(a) same in all the cases

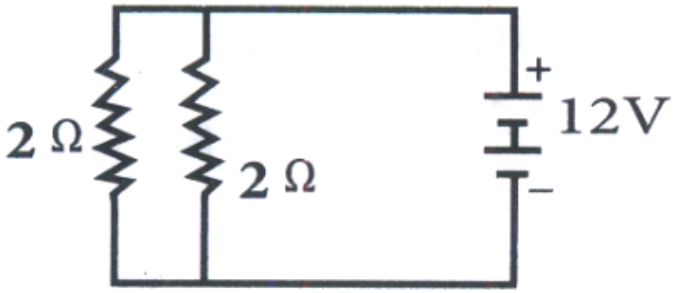
(b) minimum in case



(c) maximum in case



(d) maximum in case



Section - B

11) What is meant by saying that the potential difference between two points is 1 V? **2**

12) Why are coils of electric toasters and electric irons made of an alloy rather than a pure metal? **2**

13) Judge the equivalent resistence when the following are connected in parallel. **2**

(a) 1Ω and $10^6\Omega$

(b) 1 and $10^3\Omega$, and $10^6\Omega$.

14) (i) Draw a diagram to show how two reitor R_1 and R_2 are connected in series. **2**

(ii) In a circuit, if the two resistors of 5 ohm and 10 ohm are connected in series, how does the current passing through the two reistors compare?

15) A bulb is rated at 5.0 volt, 100 mA. Calculate its **2**

(i) power and

(ii) resistance

16) An electric iron has a rating of 750 W, 220 V. Calculate **2**

(i) current passing through it, and

(ii) its resistance, when in use

17) Calculate the elctric energy consumed by 120 W toaster in 20 minutes. **2**

18) What is the commerical unit of electrical energy? Represent it in terms of joules. **2**

19) Why is parallel arrangement used in domestic wiring? **2**

20) How is a voltmeter connected in the circuit to measure the potential difference between two points? **2**

Section - C

21) Three incandescent bulbs of 100 W each are connected in series in an electric circuit. In another circuit another set of three bulbs of the4 same wattage are connected in parallel to the same source. **5**

(a) Will the bulbn in the two circuits glow with the same brightness? Justify your answer.

(b) Now let one bulb in both the circuits get fused. Will the rest of the bulbs continue to glow in each circuit? Give reason

22) State Ohm's law? How can it be verified experimentally? Does it hold good under all conditions? Comment **5**

23) How will you conclude that the same potential difference exist across three resistors connected in a parallel arrangement to a battery? **5**

24) Find out the following in the electric circuit given in Figure **5**

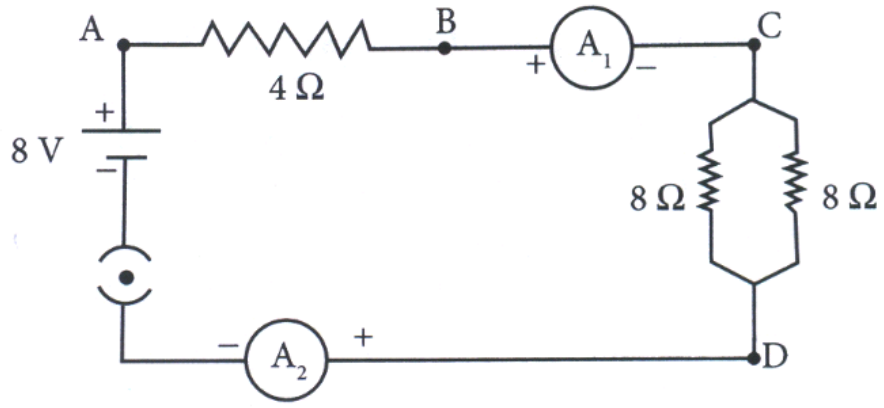
(a) Effective resistance of two 8 Ω resistors in the combination

(b)Current flowing through 4 Ω resistor

(c) Potential difference across 8 Ω resistance

(d) Power dissipated in 4 Ω resistor

(e) Difference in ammeter readings, if any.



****