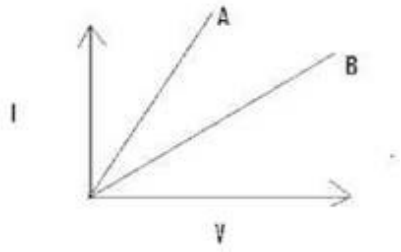
CBSE Class 10 Science

Ch-12 Electricity

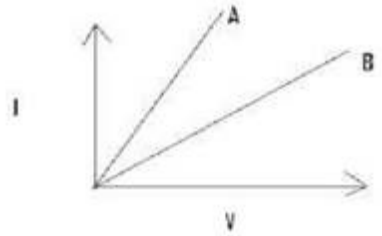
More Questions

1. Name a substance whose resistance almost remains unchanged by increase of temperature.
2. Name two special characteristics of heater coil.
3. A wire of resistance 4 Ω is bent to form a circle. What is the resistance between two diametrically opposite ends?
4. How does the resistance of a conductor change if its temperature is increased?
5. A current of 4A flows in a wire of resistance 60 Ω . Calculate electrical energy consumed in 2 minutes.
6. V-I graph for two resistors is given. Which of the two has minimum resistance?

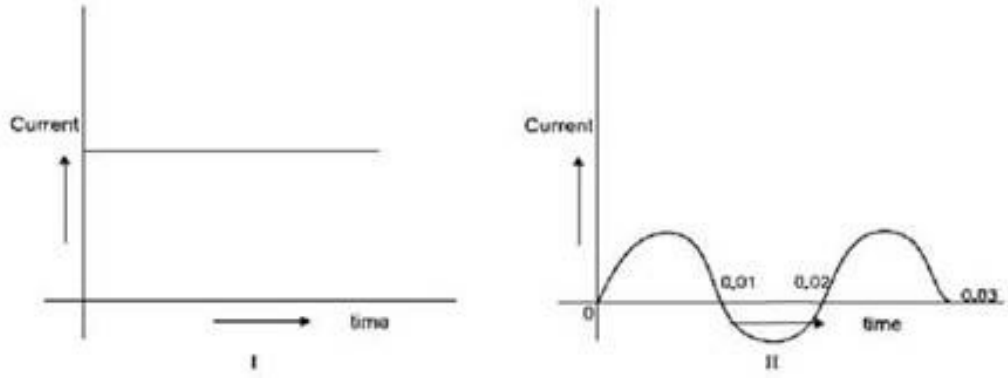


7. Alloys are used in electrical heating devices rather than pure metals. Give one reason.
8. An electric geyser has the ratings 2000W, 220V marked on it. What should be the minimum rating, in whole number of a fuse wire that may be required for safe use with this geyser?
9. The electrical resistivity of few materials is given below in ohm-meter. Which of these materials can be used for making element of a heating device?
   A. 6.84×10^{-8}
   B. 1.60×10^{-8}
   C. 1.00×10^{-4}
   D. 2.50×10^{2}
   E. 4.40×10^{-5}
   F. 2.30×10^{17}
10. Where do we connect a fuse: with live wire or with neutral wire?

11. What is the resistance of an air gap?
12. Name two safety measures commonly used in electric circuits and appliances.
13. Two metallic wires A and B are connected in parallel. Wire A has length l and radius r, wire B has a length 21 and radius 2r. Compute the ratio of the total resistance of parallel combination and the resistance of wire A.
14. What is the meaning of the term 'frequency' of an alternating current? What is its value in India? Why is an alternating current considered to be advantageous over direct current for long-range transmission of electric energy?
15. A TV set picture tube shoots out a beam of electrons. The current due to this beam is 10 mA. How many electrons will strike the TV screen every second?
16. An electric wire is stretched to increase its length by 25%. By what % will the resistance be increased and what will be increase in its resistivity?
17. An electric iron of resistance 20 Ω takes a current of 5 A. Calculate the heat developed in 30 sec.
18. A 60 W electric lamp gives off energy in the form of light at the rate of 7.5 J/s. What percentage of energy does the lamp transform into light?
19. The voltage-current variation of two metallic wires A and B at constant temperature are shown in fig. Assuming that the wires have the same length and same diameter, explain which of the two wires will have larger resistivity.



20. You are given following current-time graphs from two different sources:



i. Name the type of current in two cases.

ii. Identify any one source for each type of these currents.

iii. What is the frequency of current in case II in India?

21. The electric power consumed by a device may be calculated by using either of the two expressions $P = I^2R$ or $P = V^2/R$. The first expression indicates that it is directly proportional to R whereas the second expression indicates inverse proportionality. How can the seemingly different dependence of P on R in these expressions be explained.
22. Draw a schematic diagram of a circuit containing the following electrical components:
    a. a resistance
    b. a voltmeter
    c. an electric bulb
    d. a cell
    e. an ammeter and
    f. plug key