

Chapter 34 Test Electric Current

True or False Questions*Circle the correct answer.*

- T** **F** 1. Charge will move in a conductor when there is a difference in potential between the ends of the conductor.
- T** **F** 2. The unit of electric current is the ampere.
- T** **F** 3. Most of the electricity we buy through power companies is DC current.
- T** **F** 4. When you turn on a light, electrons move at speeds near the speed of light in order to light up the light bulb.
- T** **F** 5. Electrical outlets in our walls are a source of electrons to run electrical appliances.

Multiple Choice Questions*Choose the best answer to each question and write the appropriate letter in the space provided.*

- _____ 6. An example of a voltage source is
a. a dry cell.
b. rubbing a rubber rod with fur.
c. a car battery.
d. all of the above
- _____ 7. Electrical resistance in a wire depends on the wire's
a. conductivity.
b. length.
c. thickness.
d. all of the above
- _____ 8. Compared to thin wires, electrical resistance in thick wires is
a. greater.
b. less.
c. the same.
- _____ 9. When connected to a 120-volt power supply, how much current exists in a light bulb that has a resistance of 240 ohms?
a. 28,800 A
b. 240 A
c. 120 A
d. 0.5 A
- _____ 10. If you accidentally grabbed the prongs of a partially plugged-in 120-V electrical plug on a day when your skin resistance was 120,000 ohms, how much current would pass through your body?
a. 12,000,000 A
b. 1000 A
c. 120 A
d. 0.001 A

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- _____ 11. The primary reason a bird can perch harmlessly on bare high voltage wires is that
- a bird has a very large electrical resistance.
 - a bird's feet are close together.
 - there is no potential difference across the bird's feet.
 - all of these
- _____ 12. In an alternating current circuit, electron flow is
- slower than a snail's pace.
 - almost the speed of light.
 - simply back and forth, going nowhere.
- _____ 13. Current from a battery is
- DC.
 - AC.

Math Problems

Solve the following problems in the space provided. Show all work.

14. How much voltage is required to make 10 amperes flow through a 10-ohm resistor?
15. What is the power dissipated by a toaster that has a resistance of 20 ohms plugged into a 120-V outlet?

Essay Question

On a separate sheet of paper, answer the following question.

16. What is the difference between direct current and alternating current? When we plug a light bulb into a wall outlet, where do the electrons come from?