

# Concept Review

17-2

## Section: Current

1. **State** the condition that is necessary for a charge to move in a wire.  
\_\_\_\_\_  
\_\_\_\_\_
2. **Explain** how connecting an electric device to a battery produces a current in the device.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. **Relate** the definition of electric current to the units of current.  
\_\_\_\_\_  
\_\_\_\_\_
4. **Describe** the cause of resistance and how the resistance of a wire can be determined.  
\_\_\_\_\_  
\_\_\_\_\_
5. **Calculate** the voltage required to produce a current of 2.0 A in a wire with a resistance of 16  $\Omega$ .  
\_\_\_\_\_
6. **Calculate** the amount of current in your fingers if they touch the terminals of a 12 V battery when the resistance of your skin is 650  $\Omega$ .  
\_\_\_\_\_
7. **Compare** superconductors and semiconductors with conductors and insulators.  
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\_\_\_\_\_  
\_\_\_\_\_  
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Assessment

# Quiz

## Section: Current

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- \_\_\_\_\_ 1. An electric cell is a source of electric current because of a \_\_\_\_\_ between the terminals.
  - a. resistance
  - b. light bulb
  - c. semiconductor
  - d. potential difference
- \_\_\_\_\_ 2. A(n) \_\_\_\_\_ is a solution that conducts electricity.
  - a. electrode
  - b. voltage
  - c. terminal
  - d. electrolyte
- \_\_\_\_\_ 3. The rate at which charges move through a conductor is called
  - a. voltage.
  - b. resistance.
  - c. current.
  - d. electrical potential energy.
- \_\_\_\_\_ 4. Conventional current is defined as the movement of
  - a. positive charge.
  - b. variable charge.
  - c. negative charge.
  - d. net charge.
- \_\_\_\_\_ 5. \_\_\_\_\_ is the opposition posed by a material to the flow of current.
  - a. Voltage
  - b. Charge
  - c. Resistance
  - d. Ampere
- \_\_\_\_\_ 6. Current is produced when charges are accelerated by an electric field to move to a position of lower
  - a. temperature.
  - b. potential energy.
  - c. concentration.
  - d. kinetic energy.
- \_\_\_\_\_ 7. Calculate the resistance of a bulb that draws 0.6 A of current with a potential difference of 3 V.
  - a. 0.2  $\Omega$
  - b. 1.8  $\Omega$
  - c. 5  $\Omega$
  - d. 15  $\Omega$
- \_\_\_\_\_ 8. Which of the following has the lowest resistance?
  - a. semiconductor
  - b. superconductor
  - c. conductor
  - d. insulator
- \_\_\_\_\_ 9. A 6.0-V battery is connected to a 24- $\Omega$  resistor. What is the current in the resistor?
  - a. 0.25 A
  - b. 4.0 A
  - c. 18 A
  - d. 144 A
- \_\_\_\_\_ 10. In most cases, increasing the temperature of an object will \_\_\_\_\_ its resistance.
  - a. increase
  - b. decrease
  - c. have no effect on
  - d. nullify