

## Assessment

# Electrical Energy and Current

## Section Quiz: Electric Potential

Write the letter of the correct answer in the space provided.

- \_\_\_\_\_ 1. What is the energy possessed by a charge due to its position in an electric field?
- electrical potential energy
  - electrical kinetic energy
  - electrical mechanical energy
  - electrical potential difference
- \_\_\_\_\_ 2. Electric potential
- is measured in joules.
  - depends on the charge at the point where it is measured.
  - measures energy per unit charge.
  - is the same as electrical potential energy.
- \_\_\_\_\_ 3. Two positive charges, A and B, are separated by a distance. The electric potential at the position of charge A depends on
- the magnitudes of both charges and the distance between them.
  - the magnitude of charge A and the distance to charge B.
  - the magnitude of charge B.
  - the magnitude of charge B and the distance to charge A.
- \_\_\_\_\_ 4. Potential difference is
- inversely proportional to change in electrical potential energy.
  - the measure of the electrical potential energy of a charge.
  - the ratio of the change in potential energy to the magnitude of a charge.
  - the ratio of the magnitude of a charge to its change in potential energy.
- \_\_\_\_\_ 5. How does a positive charge move in an electric field in order to gain electrical potential energy?
- parallel to the electric field
  - perpendicular to the electric field
  - parallel to and in the same direction as the electric field
  - parallel to and in the opposite direction to the electric field

**Electrical Energy and Current** *continued*

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- \_\_\_\_\_ **6.** A charge moves between two points in a uniform electric field. What information is needed to determine the potential difference between the two points?
- a.** the magnitude of the charge, the magnitude of the field, and the displacement in the field
  - b.** the magnitude of the field and the displacement in the field
  - c.** the magnitude of the charge and the magnitude of the field
  - d.** the direction of the field and the displacement in the field
- \_\_\_\_\_ **7.** A battery is a device that maintains a potential difference between two
- a.** light bulbs.
  - b.** terminals.
  - c.** charges.
  - d.** chemicals.
- \_\_\_\_\_ **8.** The energy provided by a battery connected to a circuit results from
- a.** an electric field inside the battery.
  - b.** the components of the circuit.
  - c.** a potential difference.
  - d.** a chemical reaction.
- 9.** How is the chemical energy in a battery converted to electrical energy?
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- 10.** What is the potential difference between a point 0.79 mm from a charge of 7.6 nC and a point at infinity? ( $k_C = 8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$ )