

1. The current transported in the direction of conventional current per area is equal to
  - A) drift velocity
  - B) resistance
  - C) current density
  - D) capacitance
  - E) potential difference
2. In a straight wire with current 3 A and cross-sectional area  $4 \text{ m}^2$ , what is the magnitude of the current density in the wire?
  - A)  $0.5 \text{ A/m}^2$
  - B)  $0.75 \text{ A/m}^2$
  - C)  $1.33 \text{ A/m}^2$
  - D)  $3 \text{ A/m}^2$
  - E)  $4 \text{ A/m}^2$
3. The drift velocity in a wire is probably closest to
  - A)  $10^{-14} \text{ m/s}$
  - B)  $10^{-4} \text{ m/s}$
  - C)  $1 \text{ m/s}$
  - D)  $10^4 \text{ m/s}$
  - E)  $10^{14} \text{ m/s}$
4. Charge carrier density is best defined as
  - A) the number of mobile electrons per area
  - B) the number of mobile electrons per volume
  - C) the number of mobile protons per length
  - D) the number of mobile protons per area
  - E) the number of mobile protons per volume

5. Drift velocity is best defined as
  - A) the relationship between current and current density
  - B) the number of mobile electrons per volume
  - C) the number of mobile electrons per length
  - D) the flux of the current density through a given area
  - E) the average speed of the motion of the electrons in a wire
6. The ratio of the electric field to the current density is equal to
  - A) conductivity
  - B) resistivity
  - C) resistance
  - D) capacitance
  - E) potential difference
7. The reciprocal of resistivity is
  - A) flux
  - B) electric potential
  - C) current
  - D) conductivity
  - E) drift velocity
8. What type of relationship is exhibited between conductivity and resistivity?
  - A) direct
  - B) linear
  - C) exponential
  - D) inverse squared
  - E) inverse

**Answer Key**  
**Internal Resistance MC Questions [Mar 28, 2011]**

1.   C  

2.   B  

3.   B  

4.   B  

5.   E  

6.   B  

7.   D  

8.   E  

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Name \_\_\_\_\_

Class \_\_\_\_\_

Date \_\_\_\_\_

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