

# Warm-up Set 6

## Question

1. HRW6 27.TB.08. [119812] Current is a measure of:
- (a) amount of charge that moves past a point per unit time
  - (b) force that moves a charge past a point
  - (c) energy used to move a charge past a point
  - (d) speed with which a charge moves past a point
  - (e) resistance to the movement of a charge past a point

## Answer:

- (a) Amount of charge that moves past a point per unit time

$$I = \frac{dq}{dt}$$

## Question

2. HRW6 27.TB.14. [119818] In a conductor carrying a current we expect the electron drift speed to be:

- (a) about the same as the average electron speed
- (b) much less than the average electron speed
- (c) less than the electron speed at high temperature and greater than the electron speed at low temperature
- (d) less than the electron speed at low temperature and greater than the electron speed at high temperature
- (e) much greater than the average electron speed

## Answer:

- (b) Much less than the average electron speed

## Question

3. HRW6 27.TB.49. [119853] You buy a "75 W" light bulb. The label means that:
- (a) the bulb is expected to "burn out" after you use up its 75 watts
  - (b) none of these
  - (c) no matter how you use the bulb, the power will be 75 W
  - (d) the bulb was filled with 75 W at the factory
  - (e) the actual power dissipated will be much higher than 75 W since most of the power appears as heat

## Answer:

- (b) None of these

Watts are a unit of power, or energy per unit time. Thus, a bulb with 75 W puts out 75 Joules per second