Chapter 2 Free Fall Quiz

1. Ignoring air resistance, the acceleration of an object in free fall

- A. is zero.
- B. is negative and constant.
- C. is 9.81 m/s^2 everywhere in the universe.
- D. decreases continuously.

2. Suppose you throw a ball straight upward. Ignoring air resistance, from the instant the ball leaves your hand, its

- A. velocity increases and then decreases.
- B. acceleration decreases steadily.
- C. acceleration is constant and its velocity decreases.
- D. acceleration is constant and its velocity increases.

3. For all falling objects on Earth, acceleration

- A. is constant and negative.
- B. is constant and positive.
- C. increases from negative to positive.
- D. decreases from positive to negative.

4. At any instant, the velocity of an object in free fall on Earth depends on the

- A. weight of the object and the acceleration of gravity.
- B. mass of the object and the acceleration of gravity.
- C. size of the object. and the acceleration of gravity.
- D. acceleration of gravity only.

5. At any point on Earth, the direction of a free-falling object on Earth is always

- A. toward the center of Earth.
- B. tangent to Earth's surface at that point.
- C. perpendicular to Earth's surface at that point.
- D. unpredictable.

6. A student uses a model catapult to launch an apple with an initial upward velocity of 52 m/s. Ignoring the effects of air resistance, what is the velocity of the apple after 4.5 s?

- A. 52 m/s
- B. 96 m/s
- C. 7.9 m/s
- D. -44 m/s

7. A student stands at the edge of a deep canyon and throws a stone with an initial upward velocity of 12.0 m/s. If the stone falls into the canyon, what is its vertical velocity after 7.40 s? Ignore the effect of air resistance.

- A. 72.6 m/s
- B. 84.6 m/s
- C. -72.6 m/s
- D. -60.6 m/s