Standardized Test Prep

Answer the following items on a separate piece of paper.

MULTIPLE CHOICE

1. Which of the following masses is the largest?

  A. 0.200 g
  C. 20.0 mg
  B. 0.020 kg
  D. 2000 µg

2. Which of the following measurements contains three significant figures?

  A. 200 mL
  C. 20.2 mL
  B. 0.02 mL
  D. 200.0 mL

3. A theory differs from a hypothesis in that a theory

  A. cannot be disproved.
  B. always leads to the formation of a law.
  C. has been subjected to experimental testing.
  D. represents an educated guess.

4. All measurements in science

  A. must be expressed in scientific notation.
  B. have some degree of uncertainty.
  C. are both accurate and precise.
  D. must include only those digits that are known with certainty.

5. When numbers are multiplied or divided, the answer can have no more

  A. significant figures than are in the measurement that has the smallest number of significant figures.
  B. significant figures than are in the measurement that has the largest number of significant figures.
  C. digits to the right of the decimal point than are in the measurement that has the smallest number of digits to the right of the decimal point.
  D. digits to the right of the decimal point than are in the measurement that has the largest number of digits to the right of the decimal point.

6. Which of the following is not part of the scientific method?

  A. making measurements
  B. introducing bias
  C. making an educated guess
  D. analyzing data

7. The accuracy of a measurement

  A. is how close it is to the true value.
  B. does not depend on the instrument used to measure the object.
  C. indicates that the measurement is also precise.
  D. is something that scientists rarely achieve.

8. A measurement of 23 465 mg converted to grams equals

  A. 2.3465 g.
  C. 234.65 g.
  B. 23.465 g.
  D. 0.23465 g.

9. A metal sample has a mass of 45.65 g. The volume of the sample is 16.9 cm^3. The density of the sample is

  A. 2.7 g/cm^3.
  C. 0.370 g/cm^3.
  B. 2.70 g/cm^3.
  D. 0.37 g/cm^3.

SHORT ANSWER

10. A recipe for 18 cookies calls for 1 cup of chocolate chips. How many cups of chocolate chips are needed for 3 dozen cookies? What kind of proportion, direct or indirect, did you use to answer this question?

11. Which of the following statements contain exact numbers?

  A. There are 12 eggs in a dozen.
  B. The accident injured 21 people.
  C. The circumference of the Earth at the equator is 40 000 km.

EXTENDED RESPONSE

12. You have decided to test the effects of five garden fertilizers by applying some of each to separate rows of radishes. What is the variable you are testing? What factors should you control? How will you measure and analyze the results?

13. Around 1150, King David I of Scotland defined the inch as the width of a man's thumb at the base of the nail. Discuss the practical limitations of this early unit of measurement.

> **Test TIP** Carefully read questions that ask for the one choice that is not correct. Often these questions include words such as *is not, except,* or *all but.*