MODERN CHEMISTRY CHAPTER 2 TEST

Measurements and Calculations

MULTIPLE CHOICE: On the line at the left of each statement, write the letter of the choice that best completes the statement or answers the question.

1) The four major stages of the scientific method are .
   a) observing, formulating hypotheses, testing hypotheses, and theorizing
   b) observing, generalizing, theorizing, and formulating hypotheses
   c) observing, generalizing, theorizing, and testing hypotheses
   d) collecting data, predicting, testing hypotheses, and theorizing

2) By making several measurements with the same balance, a chemist obtained values of 5.224 g, 5.235 g, and 5.259 g for the mass of a sample. Without knowing the actual mass of the sample, we can tell that these measurements have .
   a) good precision
   b) good accuracy
   c) poor precision
   d) poor accuracy

3) Which equation is an inverse proportion?
   a) $V=(1/k)T$
   b) $F=-kX^2$
   c) $PV = k$
   d) $Y = kX - 8$

4) The distance between the sun and Earth is 150 million km. Light travels at a speed of 3.0 10 ^{8} m/s. Dividing the distance by the speed and multiplying by the number of meters in a kilometer will result in units of .
   a) seconds
   b) meters per second
   c) kilometers squared
   d) kilometers per second

5) The measurement that has only non-significant zeros is.
   a) 506 mL
   b) 60.0 mL
   c) 0.0037 mL
   d) 400. mL

6) If some measurements agree closely but differ widely from the actual value, these measurements are .
   a) both accurate and precise
   b) neither precise nor accurate
   c) precise but not accurate
   d) accurate but not precise

7) If two quantities are directly proportional, when one quantity increases by 10 percent, the other .
   a) increases by 10 percent
   b) decreases by 10 percent
   c) stays the same
   d) may increase at a different rate

8) In division and multiplication, the answer must not have more significant figures than the .
   a) number in the calculation with the fewest significant figures
   b) number in the calculation with the most significant figures
   c) average number of significant figures in the problem
   d) total number of significant figures in the problem