# Introduction to Chemistry

## Reviewing Vocabulary

Match the definition in Column A with the term in Column B.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A systematic approach used in all scientific study</td>
<td>a. chemical</td>
</tr>
<tr>
<td>2. Anything that takes up space and has mass</td>
<td>b. chlorofluorocarbon</td>
</tr>
<tr>
<td>3. A chemical that protects organisms from UV radiation</td>
<td>c. model</td>
</tr>
<tr>
<td>4. Any substance with a definite composition</td>
<td>d. matter</td>
</tr>
<tr>
<td>5. A visual, verbal, or mathematical explanation of how things occur</td>
<td>e. ozone</td>
</tr>
<tr>
<td>6. The study of matter and the changes it undergoes</td>
<td>f. scientific method</td>
</tr>
<tr>
<td>7. The act of gathering information</td>
<td>g. conclusion</td>
</tr>
<tr>
<td>8. A judgment based on the information obtained during an experiment</td>
<td>h. technology</td>
</tr>
<tr>
<td>9. The practical use of scientific research</td>
<td>i. chemistry</td>
</tr>
<tr>
<td>10. A chemical made up of chlorine, fluorine, and carbon</td>
<td>j. observation</td>
</tr>
</tbody>
</table>

## Compare and contrast each pair of related terms.

11. qualitative data, quantitative data

12. hypothesis, theory

13. dependent variable, independent variable
Understanding Main Ideas (Part A)

Circle the letter of the choice that best completes the statement or answers the question.

1. Which of the following is NOT matter?
   a. atoms  b. ultraviolet radiation  c. air  d. the Sun

2. At the end of an experiment, the scientist forms a conclusion based on the
   a. variable.  b. scientific law.  c. data obtained.  d. control.

3. Which of the following is a set of controlled observations that tests a hypothesis?
   a. mass  b. experiment  c. weight  d. constant

4. The branch of chemistry that focuses on carbon-containing chemicals is called
   a. analytical chemistry.  b. inorganic chemistry.  c. biochemistry.  d. organic chemistry.

5. How should you prepare an acid solution?
   a. Add the water to the acid all at once.  c. Add the water to the acid very slowly.
   b. Add the acid to the water all at once.  d. Add the acid to the water very slowly.

Answer the following questions.

6. Compare the macroscopic world with the submicroscopic world.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

7. Explain the relationship between CFCs and the depletion of the ozone layer.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

8. What effects might the ozone hole have on humans and other organisms? Explain.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

9. List three safety precautions you can take before entering the laboratory.

   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Understanding Main Ideas (Part B)

Identify each piece of data as either qualitative or quantitative.

1. red
2. 100 pounds
3. 105°C
4. tall
5. round
6. smells like bananas
7. 40 mph
8. pink with purple polka dots
9. cold
10. 78 books

Identify each kind of investigation as an example of pure research or applied research.

11. A researcher analyzes different compounds that might be sources of cancer drugs.

12. Researchers study the components of living cells.

13. Researchers look for a vaccine to prevent AIDS infection.

14. A researcher works on ways to improve agricultural yields.

15. A researcher observes chimpanzees in their natural habitat to learn about their behavior.


17. A researcher designs a more efficient internal-combustion engine.