3.3 INTERNATIONAL SYSTEM OF UNITS

SECTION REVIEW

Objectives
- List SI units of measurement and common SI prefixes
- Distinguish between the mass and weight of an object

Key Terms
- International System of Units (SI)
- meter (m)
- volume
- liter (L)
- weight
- kilogram (kg)
- gram (g)

Part A Completion
Use this completion exercise to check your understanding of the concepts and terms that are introduced in this section. Each blank can be completed with a term, short phrase, or number.

1. The international System of Units (SI) is a revision of the ______ system. There are ______ base SI units. In SI, the base unit of length is the ______.
2. ______
3. ______
4. The space occupied by matter is known as ______. The space taken up by a cube that is 10 cm on each edge is one ______.
5. ______
6. The quantity of ______ an object contains is its mass. A measure of the pull of gravity on an object of given mass is its ______.
7. ______
8. The mass of one cubic centimeter of water at 4 °C is one ______.

Part B True-False
Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

9. The SI base unit of mass is the milliliter. ______
10. A decigram is 100 times smaller than a gram. ______
11. The SI unit of volume is derived from the unit of length. ______
12. There are six basic SI units of measurement. ______
Part C Matching

Match each description in Column B to the correct term in Column A.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. International System of Units</td>
<td>a. non-SI unit of volume</td>
</tr>
<tr>
<td>14. meter</td>
<td>b. standardized system of measurement</td>
</tr>
<tr>
<td>15. volume</td>
<td>c. mass unit commonly used in chemistry</td>
</tr>
<tr>
<td>16. liter</td>
<td>d. the SI unit of length</td>
</tr>
<tr>
<td>17. weight</td>
<td>e. force that measures the pull of gravity on a given mass</td>
</tr>
<tr>
<td>18. kilogram</td>
<td>f. the space occupied by a sample of matter</td>
</tr>
<tr>
<td>19. gram</td>
<td>g. basic SI unit of mass</td>
</tr>
</tbody>
</table>

Part D Questions and Problems

Answer the following in the space provided.

20. What is the volume of a board that measures 1.8 cm by 8.8 cm by 30.5 cm?

21. Which one of the following is not a base SI unit?
   a. kilogram       b. liter       c. kelvin       d. meter

22. What is the symbol and meaning of each prefix?
   a. pico-
   b. kilo-
   c. micro-
   d. centi-