SECTION 15.2 Seawater

In your textbook, read about the chemical properties of seawater. Circle the letter of the choice that best answers the question.

1. About what percentage of seawater is dissolved salts?
   a. 96.5 percent  b. 9.65 percent  c. 3.5 percent  d. 35 percent

2. Which of the following salts is most abundant in seawater?
   a. sodium chloride  b. magnesium sulfate  c. potassium chloride  d. calcium chloride

3. What is salinity?
   a. the amount of dissolved salts in seawater  c. the amount of dissolved gases in seawater
   b. the amount of water in the oceans  d. another name for salt

4. What unit is commonly used to measure the salt content of water?
   a. parts per liter  b. grams per liter  c. kilograms per cubic liter  d. parts per thousand

5. In addition to salts, which of these substances is dissolved in seawater?
   a. sugars  b. nutrients  c. shells  d. seaweed

6. Which of the following would cause surface ocean water to have a higher salt content?
   a. a river flowing into the ocean  b. the melting of sea ice
   c. high rates of evaporation and low rates of precipitation  d. low rates of evaporation and high rates of precipitation

7. What evidence indicates that the salt content of ancient oceans was about the same as it is today?
   a. seafloor sediments  b. comparisons of modern seashells and fossil shells
   c. ancient lava flows that formed in seawater  d. salt content in surface water versus the salt content in bottom water

8. Which process does NOT add salts to seawater?
   a. weathering of crustal rock  c. volcanic gases
   b. decay of hard-shelled sea creatures  d. flow of rivers into the ocean

9. Which process removes salt from seawater?
   a. ultraviolet radiation  b. weathering of feldspars
   c. evaporation of elements near arid coastal regions  d. consumption of sediments by bottom-feeding organisms
SECTION 15.2  Seawater, continued

In your textbook, read about ocean layering.
Use the terms below to label the diagram of ocean temperatures.

surface layer  bottom layer  thermocline

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In your textbook, read about water masses.
Use the letters A through D to sequence the stages of water-mass movement.

16. Cold, salty water sinks.
17. Sea ice forms during the winter.
18. Salty water migrates along the ocean floor toward the equator.
19. Salt ions accumulate beneath the ice.
Section 15.2 Seawater (continued)

**Main Idea**

**Chemical Properties of Seawater**
*Use with page 395.*

**Details**

Analyze how salt is naturally added to and removed from seawater. List two ways salt is added to the sea, and three ways salt is removed from the sea. Use Figure 15-13 and information from your text to help you.

<table>
<thead>
<tr>
<th>Salt Added to Sea by...</th>
<th>Removed from Sea by...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Physical Properties of Seawater**
*Use with page 395.*

**Contrast** seawater and fresh water. List three differences.

1. __________________________

2. __________________________

3. __________________________

**Ocean Layering**
*Use with page 396.*

**Model** Draw your own graph of variations in ocean water temperatures.

Be sure to indicate:
- a layer of cold water
- a thermocline
- a layer of warm water

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Section 15.2 Seawater (continued)

Water Masses
Use with page 397.

Sequence the formation of a cold deep water mass.

____ salt ions accumulate under newly formed ice
____ salty water sinks
1 seawater freezes during arctic winter
____ cold, deep water mass migrates toward equator
____ sea ice forms
____ water beneath ice becomes saltier and denser

Organize information about water masses in the outline below.

I. Three water masses that account for most of the deep water in the Atlantic Ocean are:
   A. __________________________
      i. forms when __________________________
      ii. is the _______ and densest
   B. __________________________
      i. forms offshore from __________________________
      ii. overrides the __________________________
   C. __________________________
      i. forms when __________________________
      ________________
      ii. least _______ and warmest
      iii. overrides the other _____ masses

II. Two oceans that only contain the two deep antarctic water masses
   A. __________________________
   B. __________________________

Real-World Connection

Suppose you go on vacation to Greenland. Your travel companions suggest that the water must be very salty in the ocean surrounding Greenland. How would you respond to this?