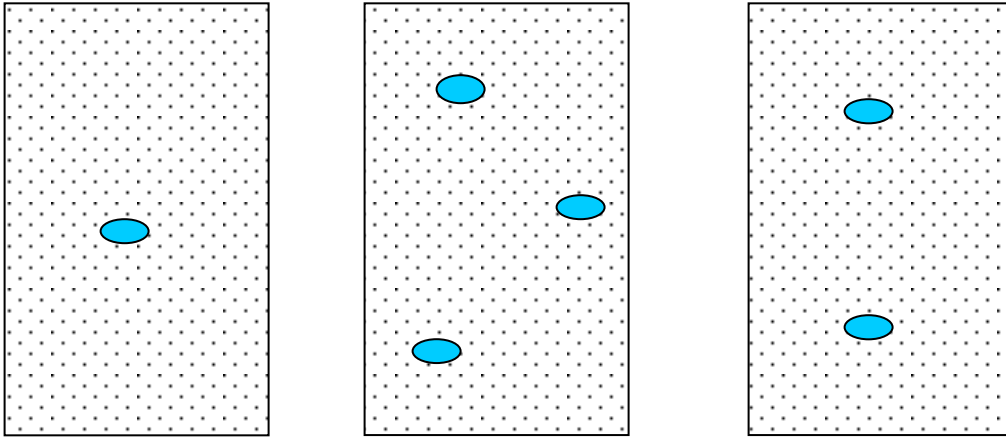


ST Pretest 1.3

**Topics to study:** Solutions Intro, Concentration (m/V %, g/L and ppm), Electrolytes, nonelectrolytes

1. a) Which of the following is the most concentrated?

● = 2 g of solute



**MOST concentrated**

- b) If each solution above has a volume of 3.0 L, find the concentration of each solution in g/L.
- c) Give an example of a non-solid solute in water.
- d) If a positive ion dissolves in water which part of the water molecules will be facing the ion? Why?
2. Express the concentration in both g/L and ppm.

Mass of solute	Volume of solution	g/L	Ppm
35 mg	2.0 L		
0.45 g	500.0 ml		

3. If the density of CCl<sub>4</sub> liquid is 1.2 g/ml, what will its m/V% be if 20 ml of it are mixed with 80 ml of oil?
  
4. a) A fish farmer wants to create a 100 000 L pond with a 30 g/L concentration of salt. How many kg of salt does he have to buy?  
  
 b) For a different type of fish, he needs a concentration of only 200 ppm of salt. How many kg of salt does he have to buy for this other 100 000 L pond?
  
5. Classify as metal, non-metal, or metalloid or noble gas.
  - a) A substance with loose electrons and which includes a family of low melting elements\_\_\_\_\_
  - b) Used in computers, this substance is a semi-conductor\_\_\_\_\_
  - c) It is lustrous but not malleable\_\_\_\_\_
  - d) You could use the acid test to distinguish between Si and an element from this category\_\_\_\_\_
  - e) It is a poor conductor of electricity\_\_\_\_\_
  - f) Very unreactive, it is also not a good conductor\_\_\_\_\_
  - g) It forms negative ions when reacting with element # 11\_\_\_\_\_
  
6. Where precisely are metalloids located in the periodic table?
  
7. Draw a CaCl<sub>2</sub> crystal dissolving in water.

Flashback(questions form previous tests)

8. What name is given to periodic table elements that are semi-conductors of electricity and which do not react with acid?
  
9. Draw a Lewis structure for oxygen.
  
10. Draw a Thomson model of the boron atom.
  
11. When some charcoal(C) burned, it reacted with 320 grams of oxygen gas (O<sub>2</sub>). If 440 g of CO<sub>2</sub> were made, how many grams of charcoal reacted?  

$$\text{C} + \text{O}_2 \rightarrow \text{CO}_2$$