Quiz Review

1. When evaporation at the ocean surface exceeds precipitation, what happens to the salinity of seawater. See Page 1 of Properties of Seawater lab.

2. Compare open ocean water near the equator and open ocean water in the North Atlantic. Use concepts of temperature, salinity, density, buoyant force. Compare graphs showing thermocline, halocline, and picnocline.

3. Explain the effects of precipitation, freezing, and evaporation on the salinity of seawater. See Page 1 of Properties of Seawater lab.

4. In open ocean water, where does the water have a greater salinity, near the surface or near the bottom? Provide an explanation for your answer. See Problem Set answers.

5. In open ocean water, where does the water have a greater density, near the surface or near the bottom? Provide an explanation for your answer. See question #2.

6. Describe the structure and usage of the Plimsol Line on a cargo vessel. See Page 1 of Properties of Seawater lab.

7. On average, what is the concentration (in parts per thousand) of salt in open ocean water world wide? 28 – 33 ppm.

8. The analysis of a sample of Orange Juice indicates that 25.0 mL of juice contains 5.5 mg of Vitamin C. How much Vitamin C is there in a 350 mL glass of juice? 77 mg

9. How much juice must be consumed to get the RDA of the Vitamin C (60 mg)? 273 mL

10. What is a positive test for the presence of starch? Turns purple in the presence of Iodine.


12. 15 mL of oxygen gas is mixed with 10 mL of hydrogen gas. The two are allowed to react to form water vapor. At the end, what gas (oxygen or hydrogen) is remaining in the test tube and how much of that gas remains? 10 mL oxygen

13. Write a balanced chemical reaction for the electrolysis of water. See laboratory.

14. In lecture I had one balloon filled with Hydrogen gas, and one balloon is filled with Oxygen gas. Just by examining the balloons, how can you distinguish one gas from the other? Hydrogen balloon floats.

15. Which of the following represent a physical change and which represents a chemical change?
   - tearing a sheet of paper
   - burning a candle
   - using a battery to light a bulb
   - boiling water
   - chewing a candy bar
   - digesting a candy bar
See Problem Set answers.
17. You pulverize a 100. mg tablet of vitamin C and mix it with 100. mL of distilled water. You extract a 10.0 mL sample and dilute this to 100 mL with distilled water. You now add a starch indicator and find you need to add 10.8 mL of iodine solution to get a permanent color change.

You now perform this experiment with orange juice. You take 25.0 mL sample of orange juice and dilute it to 100.0 mL with distilled water. You add the starch indicator as before and find you need to add 8.6 mL of iodine solution to this sample to get a purple color. (Show your work and clearly label your answers)

a. How many mg of vitamin C are in this sample of orange juice? 7.96 mg
b. How many mg of vitamin C are in an 8.0-oz (240 mL) serving? 76.4 mg
c. How many servings (mL) do you need to drink for the RDA of 60 mg of vitamin C? 188 mL