Chemistry
Study Guide Ch. 17

1. Water is a polar molecule. The _____ end of the molecule is slightly negative while the _____ end is slightly positive
2. Illustrate hydrogen bonding between two water molecules.
3. Water has a high surface tension due to the formation of _____ _____ between water molecules.
4. A surface active agent is better known as a _____ which _____ the surface tension of water
5. Water has a _____ vapor pressure because of hydrogen bonding
6. Water has a _____ specific heat because of hydrogen bonding
7. Water has a _____ heat of vaporization, because of hydrogen bonding.
8. Water has a _____ boiling point, BP, because of hydrogen bonding.
9. Water has a _____ heat of condensation, because of hydrogen bonding.
10. Water has _____ melting point, MP because of hydrogen bonding.

11. As the size, molar mass of number of electrons, of molecules increases the BP is expected to _____ due to increasing intermolecular attraction.
12. As polarity of molecules increase the BP is expected to _____ due to increasing intermolecular attraction.
13. For most solids density is _____ than in the liquid sate. Water is different. As liquid water turns to a solid it expands and its density _____. Water is its most dense at _____. Study the top of p. 481. Which state, solid or liquid has more empty space? _____How does this explain why liquid water is more dense than solid water, ice?
14. A solution in which water is the solvent is called an _____ _____ .
15. Sugar is dissolved in water. Sugar is the _____. Water is the _____
16. Study Figure 17.12. What part of the water molecules point in toward a negative ion? _____ What part of the water molecules point in toward a positive ion? _____. _____ is the process that occurs when a solute particle becomes surrounded by solvent molecules. Hydration is the name for _____ when water is the solvent. Study Fig. 17.11 Why is the blue color held back by the filter paper? _____.
17. Most ionic compounds dissolve in water. List two that do not. _____ _____.
18. _____ dissolves _____ indicates that polar tends to dissolve polar , nonpolar tends to dissolve nonpolar, and polar and nonpolar ten not to like each other.
19. Compounds that conduct electricity in _____ solutions or the _____ state are called electrolytes. Compounds that do not conduct electricity in aqueous solution or molten are called _____
20. Give two examples of nonelectrolytes. _____ _____.
21. Compounds that completely dissociate (break up into ions) or Ionize (form ions) in water produce many ions in solution. THhese compounds are called _____. Hydrochloric acid, HCl, and table salt, NaCL are examples.
22. Compounds that produce few ions in solution are called _____ _____ Vinegar an aqueous solution an acetic acid, is an example.
23. Crystals that have _____ molecules as part of the crystal structure are called hydrates. The water molecules that are part of the crystal structure are called waters of hydration. How many waters of hydration per CuSO4 are in copper (II) sulfate pentahydrate? _____ What is the formula for this hydrate? _____
24. Study Fig. 17.15 Write balanced equation for this reaction.

25. If a hydrate tends to lose water to the atmosphere it is said to _____.
26. A substance that removes moister form the air are said to be _____.
27. Hygroscopic substances that are used as drying agents are called _____.
28. _____ compounds remove sufficient water from the air to dissolve completely and form solutions.

29. _____ are heterogeneous mixtures from which suspends particles settle out upon standing
30. Study Fig. 17.18. Why is the liquid in the Erlenmeyer flask clear?
31. Smoke and fog are examples of a type of heterogeneous mixture called _____.
32. Study Fig. 17.19. Which two of the three exhibits the Tyndall effect? _____ _____
33. The chaotic motion a pollen grain when viewed under a microscope became known as _____ _____ . Brown could not explain the phenomenon at the time. TI was later explained with the development of kinetic theory.
34. An _____ is a colloidal dispersion of a liquid in a liquid. What is required to maintain a stable emulsion? _____ _____. Give two examples of emulsifying agents.
_____
_____.