Water, Solutions, and Concentration Quiz Review

***\*This is for a grade and it is due at the end of class. Please turn in to the sub when finished. This is individual work. You can use your notes for this quiz review. This exact quiz review will be posted online along with the key.***

***USE your notes! 12.1 & 12.2***

1. Name 3 properties of water that is vital for biological life:

2. The intermolecular force that gives water its unique characteristics is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A) ionic bond B) covalent bond C) hydrogen bond D) metallic bond E) repulsive bond

3. For a solution made up of magnesium chloride salt and water, MgCl2 is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and H2O is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. Which of the following will dissolve in water?

A) Oil (a hydrocarbon) B) CaF2 C) Cu D) Br2 E) methane (CH4)

5. If the nonpolar molecule carbon tetrafluoride (CF4) was a solvent, which substance would be a good solute to dissolve?

A) F2 B) NaCl C) water D) ethanol alcohol E) diamonds

6. List 3 ways to increase the dissolving ability of a SOLID solute in a given solvent?

7. Adding solute (like salt) into a solvent (water) would disrupt the crystal formation of ice. This will \_\_\_\_\_\_\_\_\_\_\_\_.

A) decrease the boiling point

B) increase the freezing point

C) decrease the freezing point

D) depresses the boiling point

E) increase the potential energy

8. If the temperature of a solution made up of a gas in a liquid increased, the solubility of the gas \_\_\_\_\_\_.

A) remains the same

B) increases

C) tripled

D) decreases

E) cannot be determined

9. What is it called when 2 liquids dissolve in each other?

10. What percentage of water is actually accessible for human usage?

\*\*continue of backside\*\*

M = mol/ L m = mol / kg

\*\*Convert units as needed!

11. What is the molality of 10.2 grams of MgCl2 in 2500 grams of water? \*Remember to convert grams of solute to moles!

12. What volume (in liters) of water is needed to produce 12.5 M of HCl if you had 2.77 moles of the solute to work with?

13. How many grams of NaCl is needed to produce 2.5 M NaCl solution with a volume of 1250 mL?

14. How many kilograms of water is needed to produce a molality of 1.25 m given that you had 0.55 moles to work with?