

Vasquez High School -- Chemistry B -- Exam #5 -- Chapter 15 -- 70 points

Write TRUE if the statement is true OR write the word(s) that substitute for the underlined word(s) that make it true. Writing false only earns partial credit. Three points each.

- _____ 1) A solution containing less than the maximum amount of solute is called a supersaturated solution.
- _____ 2) The number of moles is the number of H^+ or OH^- a compound delivers per molecule.
- _____ 3) The process of adding more solvent to a solution is called dilution.
- _____ 4) Molarity times molar mass equals number of moles present in a solution.
- _____ 5) The lowering of a freezing temperature of a liquid with solutes dissolved is called the phenomenon of ionic solid dissociation.

Short answer/fill-in. Answer each neatly and completely. Three points apiece.

- 6) The rate of dissolving a substance depends on what three factors? _____,
_____, and _____.
- 7) A colligative property of a solution depends on what? _____
_____.
- 8) What does "like dissolves like" mean? _____
_____.
- 9) A solute dissolved in water is called a(n) _____ solution.
- 10) Is it possible for a saturated solution to be dilute? If yes, state how. If no, state why. _____

_____.
- 11) Why is it we add salt to the water when we cook spaghetti? _____
_____.
- 12) How does soap clean oil and grease from your hands when water alone will not do so? _____

_____.

Calculation Section. Show all appropriate formulas and show ALL your work. No work, no credit. Five points apiece on these.

- 13) 45.0 mL of a 18.0 M stock solution is diluted to a new volume of 0.900 L. The concentration of this new solution is what?
- 14) What volume of a 0.350 M $\text{Mg}(\text{OH})_2$ solution is required to neutralize 180 mL of a 0.500 M solution of HCl?
- 15) Calculate the normality of a 0.268 M solution of H_3BO_3 .
- 16) Calculate the new molarity when 350 mL of water is added to 250 mL of a 0.64 M solution of Na_2SO_4 .
- 17) Ten points on this one. When a solution of barium nitrate, $\text{Ba}(\text{NO}_3)_2$, is treated with a mass of crystals of potassium sulfate, K_2SO_4 , a precipitate of barium sulfate is formed. How many grams of barium sulfate is formed if 5.3 g of potassium sulfate is added to 350 mL of a 1.6 M solution of barium nitrate?
- Write the balanced equation first. (three points)
 - Calculate how many moles of each you have. (three points)
 - Find the answer. (four points)
- 18) Four points. Define molarity: _____.
(completely)