

CHM 130 Homework 7.

1. What's the difference between a solution, a suspension, and a colloid? Give examples of each.
2. What does "like dissolve like" mean?
3. Why don't oil and vinegar mix? You should discuss this in terms of what happens at a molecular level.
4. Explain why chemical compounds tend to dissolve more quickly in hot solvent than in cold solvent.
5. Give an example of two liquids that are immiscible (with each other).
6. How can you make a supersaturated solution from a saturated solution?
7. How can you make an unsaturated solution from a saturated solution?

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8. What is the molarity of a solution made when you dilute 35 grams of sodium carbonate to a volume of 3,400 mL?

9. If I add 25 mL of water to 125 mL of a 0.15 M NaOH solution, what will the molarity of the diluted solution be? (Use $M_1V_1 = M_2V_2$)

10. If I add water to 100 mL of a 0.15 M NaOH solution until the final volume is 150 mL, what will the molarity of the diluted solution be? (Use $M_1V_1 = M_2V_2$)

11. How much 0.05 M HCl solution can be made by diluting 250 mL of 10 M HCl?
(Use $M_1V_1 = M_2V_2$)

12. How much water would I need to add to 500 mL of a 2.4 M KCl solution to make a 1.0 M solution?

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13. How many grams of calcium chloride will be needed to make 750 mL of a 0.100 M CaCl_2 solution?
14. Substances that dissolve in water are classified according to whether they produce molecules or _____ in solution.
15. When an ionic compound dissolves, the _____ and _____ ions separate from each other and are surrounded by _____ molecules.
16. These solute ions are free to _____, making it possible for an _____ to pass through the solution.
17. A substance that dissolves in water to give a solution that conducts electric current is called an _____.
18. A solutions containing _____ solute molecules does not conduct electric current because it does not contain mobile charged particles.
19. A substance that dissolves in water to give a solution that does not conduct an electric current is called a _____.
20. Name a compound that is an electrolyte.
21. Name a compound that in a non-electrolyte.
22. What is an aqueous solution?
23. What is Henry's Law?

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24. What is osmosis?

25. What is dialysis?

26. Explain the difference between hypotonic, isotonic, and hypertonic with respect to blood and what each term would cause blood cells to do.

27. What is the mass % of a solution where 4.5g are dissolved in 100g of solution?

28. What is a Hydrogen Bond (Interaction)? Give an example of a compound that forms hydrogen bonds in the pure liquid state.

29. What is a Dipole- Dipole interaction? Give an example of a compound that forms Dipole-Dipole interactions in the pure liquid state.

30. What are (London) Dispersion Forces?