Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Blk: \_\_\_\_

**Ch.13 Properties of Solutions**

By the end of the unit, I will be able to:

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| **Section** | **Learning Outcomes** | **Stoplight After** |
| Sec. 13.1, 13.3 and 13.4 | * Describe the energy changes that occur in the solution process in terms of the solute-solute, solvent-solvent, and solute-solvent attractive forces; describe the role of disorder in the solution process |  |
| * Rationalize the solubilities of substances in various solvents in terms of their molecular structures and intermolecular forces |  |
| * Describe the effects of pressure and temperature on solubilities |  |
| Sec. 13.2 | * Define mass percentage, parts per million, mole fraction, molarity, molality, and calculate concentrations in any of these concentration units. |  |
| * Convert concentration in one concentration unit into any other (given density of the solution where necessary) |  |
| Sec. 13.5 | * Determine the concentration and molar mass of a non-volatile non-electrolyte from its effect on the colligative properties of a solution. |  |
| * Explain the difference between the magnitude of changes in colligative properties caused by electrolyte compared to those caused by non-electrolytes. |  |
| * Describe the effects of solute concentrations on the vapour pressure, boiling point, freezing point, and osmotic pressure of a solution, and calculate any of these properties given appropriate concentration data. |  |
| Sec 13.6 | * Describe how a colloid differs from a true solution |  |

**Reflection:**

I feel I need to focus my studying on….