**Name: Period: Seat#:**

**Worksheet #1**

**Write the definition and/or equation for each term and/or describe how the technique works. Some of these may be review from Honors Chem! If you don’t remember, then go back and review Honors!**

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| --- | --- | --- | --- | --- | --- |
| 1. Solute | 1. Solvent | | 1. Solution | | 1. Homogeneous |
|  |  | |  | |  |
| 1. Heterogeneous | 1. Filtration | | 1. Decanting | | 1. Distillation |
|  |  | |  | |  |
| 1. Volumetric Flask | 1. Serial Dilution | | 1. Dissolving | | 1. Dissociating |
|  |  | |  | |  |
| 1. Saturated | 1. Unsaturated | | 1. Supersaturated | | 1. Electrolyte |
|  |  | |  | |  |
| 1. Paper Chromatography | | 1. TLC Chromatography | | 1. Column Chromatography | |
|  | |  | |  | |
| 1. Molarity (M) | 1. Molality (m) | | 1. Mole Fraction (χ) | | 1. Weight Percent (%) |
|  |  | |  | |  |

**Conceptual Questions**

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| --- | --- |
| 1. Which of the following ionic compounds are insoluble in water? (Remember your solubility chart!) Explain what general “rule” from the chart gave you the clue that it was insoluble.   *KCl, AgNO3, BaSO4, (NH4)3PO3* | 1. Match each solute with its most appropriate solvent. Explain why you matched them the way you did.   Solute: Solvent:   *Table Salt (NaCl) Pentane (C5H12)*  *Wax (C31H64) Butanol (C4H9OH)* |
| 1. Which of these is NOT a solution? What is it instead? Explain/Define what it is since it isn’t a solution.   *Clean air, Milk, Gatorade, Gold Alloy* | 1. Which of these is NOT an electrolyte? Why is it not an electrolyte but the others are?   *HCl, NaOH, NH4Br, C12H22O11* |

**Separation Technique Questions – there are a few new ones mixed in!   
You can probably figure them out with common sense, otherwise look them up!**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. Can be used to separate a mixture of Fe and Cu fillings.   a) Magnetic separation  b) Crystallization  c) Evaporation d) Distillation | | 1. Could be used to separate aqueous CuSO4 from water.   a) Evaporation  b) Distillation  c) Chromatography  d) Decanting | | 1. Could be used to separate tea from loose tea leaves.   a) Chromatography  b) Decanting  c) Filtration  d) Crystallization | |
| 1. A method used to separate a mixture that comprises solutes that dissolve in the same solvent.   a) Evaporation  b) Filtration  c) Chromatography  d) Sublimation | | 1. Liquids that do not mix may be separated by using.   a) a separating funnel  b) an evaporating dish  c) Liebig condenser  d) a filter funnel | | 1. What type of chromatography should you use if you want to collect a purified sample of one of the components?   a) Paper  b) Thin Layer  c) Column | |
| 1. What separation technique is shown below? | 1. The diagram shows the apparatus for separating solid and water. What are the labelled parts? | | 1. The thin layer chromatography plate shown below has a polar stationary phase. It was developed using hexane as the solvent. Which sample is the most polar? | | |
| 1. Which two would be most easily separated via distillation?   *Boiling Pts:   1 = 30°C   2 = 60°C   3 = 120°C   4 = 110°C* | | 1. The process of evaporating a liquid and then condensing the vapor by cooling it is known as   a) filtration  b) chromatography  c) decanting  d) distillation | | 1. Chromatography separates chemicals based on differences in   a) mass  b) polarity  c) boiling point  d) particle size | |
| 1. Describe three common lab errors that often occur during the filtering process. Explain whether each error would lead to a higher or lower % yield. | | | | | 1. Very helpful chromatography video to watch. Please watch! <http://tinyurl.com/3r33yuyc> |