Chem 343 **Name: _____**

Quiz 5 **Section: _____**

Based upon your experience last week with extractions, what is typically the purpose of washing the organic ether layer containing your desired product with a brine solution?

a) **to force the precipitation of your product**
b) **to deprotonate the product and make it water-soluble**
c) **to remove trace amounts of water in the ether layer (dry the ether layer)**
d) **any of these could be reasons for a brine wash**

Extraction as a separation method relies on selective solubility. The organic solvent you will use is hexane ("hexanes" to be specific…). When you mix the hexanes with water, you will expect to see:

a. **two layers: the top will be hexane, as hexane is more dense than water.**
b. **two layers: the top will be hexane, as hexane is less dense than water.**
c. **two layers: the top will be water, as water is less dense than hexane.**
d. **no separation of layers.**

The first step of today's experiment is to grind spinach leaves in acetone with a mortar and pestle. The purpose of this step is:

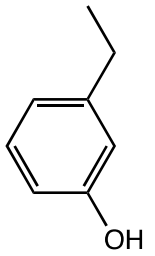
a. **to solubilize the organic plant pigments in the spinach leaves.**
b. **to extract water out of the spinach leaves.**
c. **to solubilize the cellulose in the spinach leaves.**
d. **to wash the dirt off of the spinach leaves.**

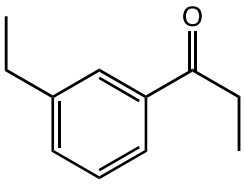
Like the experiment last week, today you will perform a liquid-liquid extraction. The organic solvent you will use is hexane ("hexanes" to be specific…). After the hexane layer is separated, you will treat it with a drying agent. How can you tell when you have added enough?

a. **You add the drying agent until it all clumps in the bottom of the flask.**
b. **You measure how many grams of solution you have and add an equal number of grams of drying agent.**
c. **You add just enough drying agent until some of it does not clump upon addition.**
d. **You measure the volume of solution and add half that volume of drying agent**

What is the R_f value for a spot that travelled 10 cm up a TLC plate if the solvent front travelled to 50 cm?

A developed TLC plate evidenced the presence of 2 compounds, one having a R_f of 0.33 and one having an R_f of 0.60. Shown below are structures for the two most likely compounds. Below each structure, write the R_f you think best matches.





R_f: _____ R_f: _____