**A glimpse of the written Lab practicum (to be administered Tuesday 4/21/15) ~60 points**

1. **Scenes from Organic Procedure Disaster films**



Ethyl butanoate

**Disaster scene 1**

Jack Chemist wants to carry out an esterification to make ethyl butanoate.

He proposes the following procedure…**List 3 errors in Jack’s proposed procedure:**

**Disaster Scene 2**

Jill Chemist wants to solvent extract her reaction mixture which contains water-soluble sodium benzoate and water-insoluble benzyl alcohol. She proposes the following procedure…

**List 3 errors in Jill’s proposed procedure:**

1. **Old School Mates**
2. Baeyer test
3. Solvent extraction
4. Refractive index
5. Steam distillation
6. Fractional distillation
7. Retrograde rotation
8. Recrystallization
9. Hanon practice

Decide which of the classic techniques listed to the right best suits

the goals below (use #):

1. **Let the Punishment Fit the Crime: Instrumental Method Matching**

a)GC-MS b)GC c) Abbe Refractometer d)ATR-FTIR e)NMR f)Mel-Temp

f)Baeyer test solution g)Bromine test solution

Which method above is most appropriate for….

**4. IR Analysis**

-What band (cm-1) is a strong indicator of the presence of an…

-Pick from the list of possible compounds below, the most likely identification of Compound A and B

**5. 1H and 13C NMR Antics**

-If Hx has 5 nearest neighbor protons, what is the multiplet splitting…

-What motion is associated with…

-from the NMR spectrum, and the formula---determine the compound’s structure

**6. GC-MS Reckonings**

-What is the name of the largest mass possible for a compound in a MS spectrum ?

-Based on the cracking pattern below, and given the formula….decide the fragment identities of …

-What is the likely structure of this compound ?

1. **A Final Reckoning**

A compound (call him Stinker) has been carefully isolated during the course of an organic synthesis. He exhibits the following spectral data…determine the likely molecular structure of Stinker…