

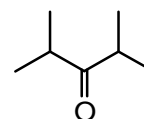
332 PL2: Qualitative Analysis

Name: _____

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In this laboratory experiment you will be given an unknown substance. The substance could be any chemical listed in Appendix VI. You must identify the substance over the course of several lab periods. At first you will use solubility tests, classification tests, and physical properties to narrow down the list of possible unknowns to approximately three candidates. In the next stage you will prepare derivatives to positively identify your unknown. After getting the go-ahead from your instructor, you will confirm your identification by collecting IR and ^1H NMR spectra in the final stage.

Suppose your unknown is 2,4-dimethyl-3-pentanone for questions 1-3.



1. What preliminary work (purification, physical measurements, etc.) will be necessary for this compound?

2. (a) What solubility characteristics will your unknown possess?

(b) With only solubility information, what functional groups could your unknown contain?

3. What classification tests are necessary to determine that your unknown is a ketone? Describe the results that your unknown would exhibit for each test.

4. If a recrystallization of your unknown is necessary, describe the most efficient way to test a handful of different solvents to determine the best solvent for recrystallization.