

Name: \_\_\_\_\_

Locker Number: \_\_\_\_\_

Experiment 21

**NUCLEOPHILIC SUBSTITUTION REACTIONS:  
COMPETING NUCLEOPHILES**

Pre-Lab Exercise

1. What is the purpose of the concentrated sulfuric acid in this reaction. Use the appropriate equation to justify your answer.
2. What is meant by the "retention time" in gas chromatography?
3. How do you determine the relative percentages of substances in a mixture which you analyze by gas chromatography? Answer by describing a specific method.
4. What is the approximate sample size required for a gas chromatography experiment?