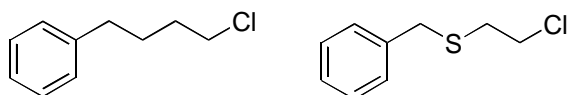


1. (5) Draw structures for (1) diazomethane; (2) isobutyl azide; (3) HMPA; (4) a Wittig reagent; (4) the phenonium ion derived from 2-bromo-2,3-dimethyl-3-phenylbutane.

2. (5) Predict the product(s) and write a reasonable mechanism for the reaction below.

large excess of benzene + 1-bromo-2,2-dimethylpropane + ferric bromide catalyst

3. (5) Would you expect the electrophilic reactivities of the compounds illustrated below to differ significantly? Provide a reasonable justification for your answer.



4. (10) Rank the compounds within each series with regard to the tendency to ionize under acidic conditions. Clearly indicate the direction of your scale (i.e. use labels such as 'most reactive', etc.). Provide a brief rationale for your rankings.

