

## Pre-Lab Questions

1. Draw the three possible diol products for this experiment, and then describe their stereochemical relationship to each other. Which of these are expected to have different  $R_f$  values on TLC? Which will have the same  $R_f$  values?
2. The active reagent in Oxone is also called potassium peroxomonosulfate. Draw its structure. When it reacts with acetone, it forms dimethyldioxirane (DMDO). Draw the structure of DMDO.
3. How will you utilize TLC to determine the reaction outcomes? Assume that you will have access to any chemicals that you may need. Be specific.
4. Draw a reasonable mechanism for dihydroxylation with DMDO that would lead to formation of the *cis*-diol.
5. Draw a reasonable mechanism for dihydroxylation with DMDO that would lead to formation of the *trans*-diol.
6. Draw a reasonable mechanism for dihydroxylation with DMDO that would lead to formation of a mixture of the *cis*- and *trans*-diols.