19A.1 Provide systematic names for aldehydes and ketones



19B. Draw the mechanism of imine, enamine and acetal formation.

19B.1 Provide a mechanism for the following transformations. Show all intermediates and use curved arrows to show electron flow.





19B.2 If all steps of enamine formation are in equilibrium, how is the can the reaction be shifted towards the enamine product? How can the reaction be shifted toward the carbonyl starting material?

19C. Predict the products of imine, enamine, acetal reactions and their hydrolysis. Predict the products of Wittig reactions.







19C.2 Fill in the missing reagents for the following reactions.



19.C.3 What ylide and carbonyl compound could the following molecules have come from?





19D. Use aldehyde and ketone addition reactions as part of multistep synthesis.

19D.1 a) Explain the purpose of adding then removing the acetal in the synthesis below. b) fill in the appropriate reagents.



19D.2 a) Why is the following synthesis flawed? b) Provide a working synthesis for the transformation.



19D.3 Propose a multistep synthesis for the following transformations.



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