Advanced Chemistry: Alkene Rxns Wkst #2 Name:

Given: 2-cyclohexenol mixed with hydrogen chloride with carbon tetrachloride as the solvent.

1. Draw and name the reactants and solvent.

2. Write out the overall equation for this reaction.

3. Draw an energy diagram for this reaction. Identify on the graph initial energy, final energy, activation energies, transition states, intermediate(s) and free energy change.

4. Write out the mechanism for this reaction. Be sure to show all electron pair movements using fishhook arrows.

Given: 3-methyl-1-butene in an aqueous solution of bromine

5. Write out the overall equation for this reaction.

6. What type of reaction is this?

7. Draw out the mechanism for this reaction.

8. What is the rule that explains the regioselectivity of this reaction?

9. What is the general name for the intermediate in this reaction?

10. The intermediate in this reaction underwent a change. Explain why this sometimes happens.

Given: methylpropene in water.

11. In order for this reaction to proceed a catalyst needs to be added. What are two possible catalysts that we proposed for this reaction?

12. Write out the overall equation for this reaction.

13. Name the product(s)

14. Draw out the mechanism for this reaction.

Given: methylenecyclopentane is mixed with hydrogen hypobromide in a dichloromethane solvent.

15. Write out the overall equation for this reaction.

16. Draw the mechanism for this reaction.