

Name: _____

Organic Test #2 - SCH 4U

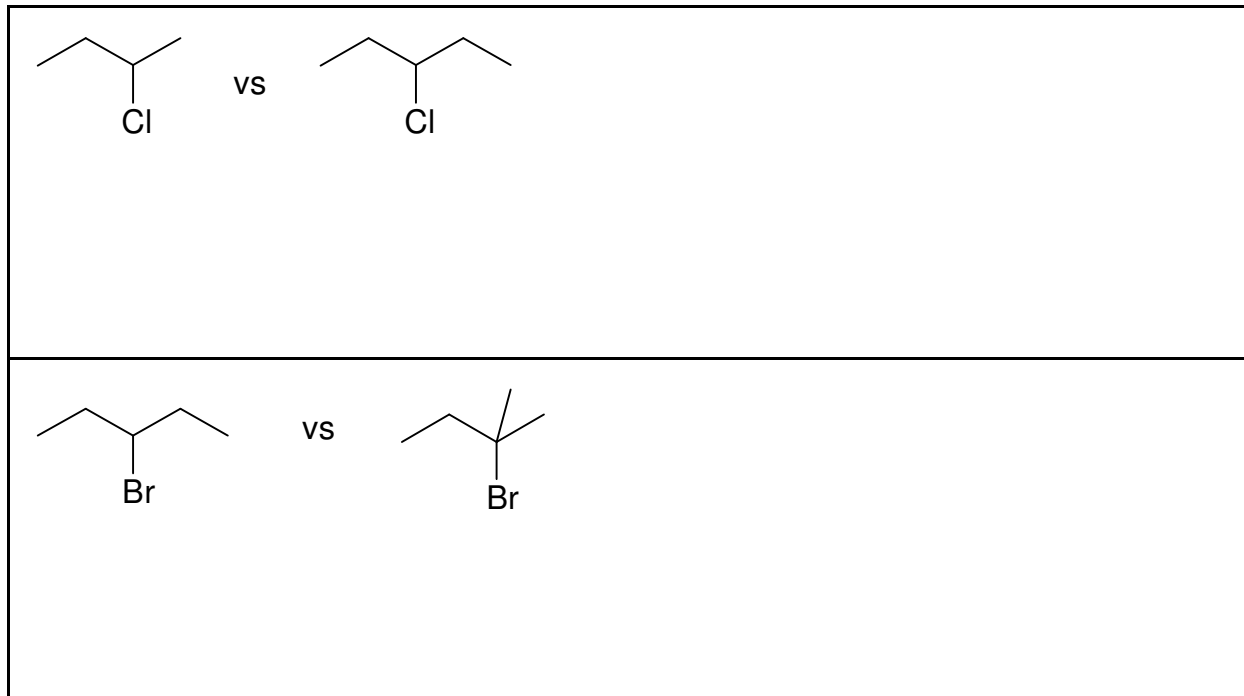
1. Given the following bond lengths

- carbon to carbon single bond = 154 pm
- carbon to carbon double bond = 134 pm
- carbon to carbon bond found in benzene = 140 pm

Explain these experimental observations given the nature of the "special type" of bonding in benzene.

2. Would you expect hexane to dissolve well in water or pentane? Explain the reasons for your choice.

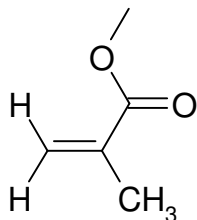
3. For each pair of compounds, which compound would react faster in a substitution reaction and why. Circle the faster reacting substance. What concept is at work here?



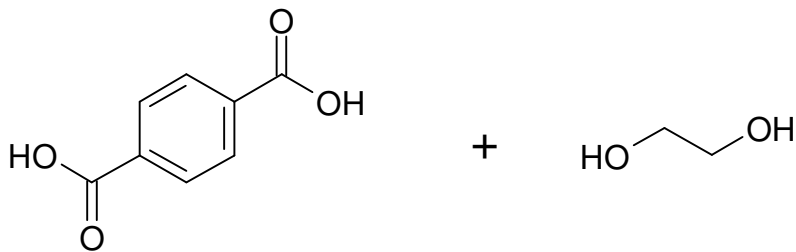
4. Explain the reactivity of alcohols (1° , 2° , & 3°) when oxidized by an oxidizing agent such as potassium permanganate in water ($\text{KMnO}_4/\text{H}_2\text{O}$). Include clear reference (perhaps using diagrams) as to the hydrogen removal in each class of alcohols and be sure to indicate the nature of product for each class of alcohols.

5. For the following monomers, write:
- whether the monomer will undergo and addition of condensation polymerization
 - a polymer structure that is at least four monomer units long
 - necessary reaction condition for addition reactions
 - stable by-product for condensation reactions

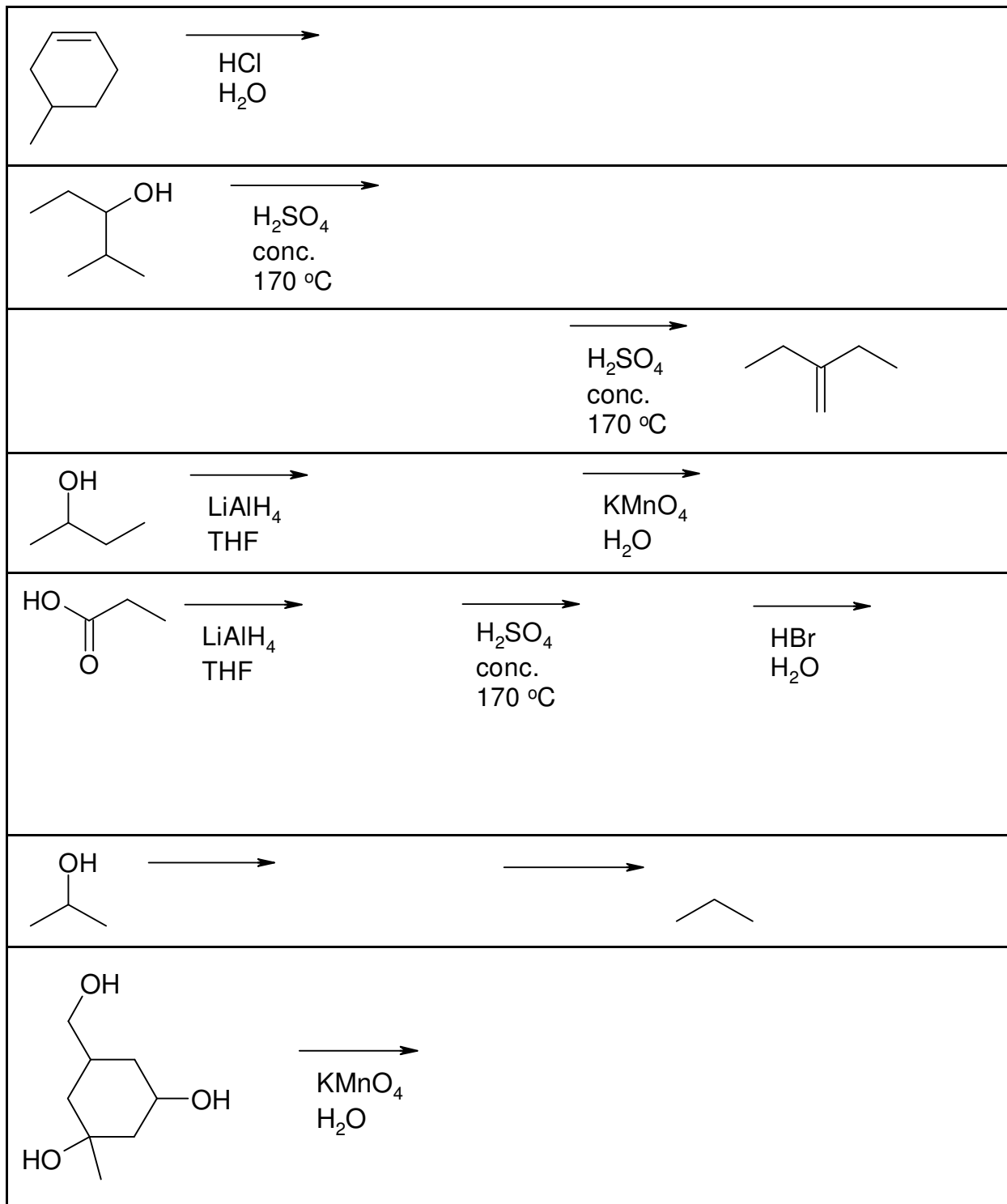
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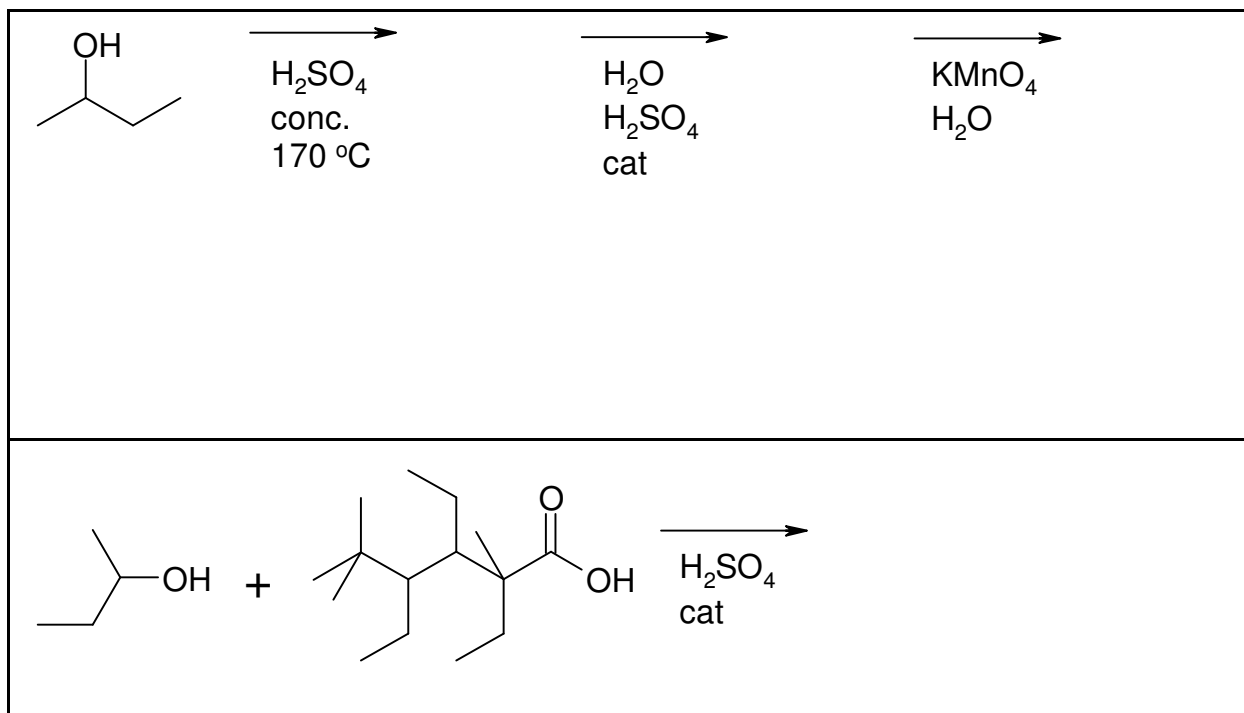


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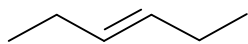


6. Complete all reactions by providing reactants, products, intermediates and all reaction conditions, whatever is required. The marking scheme will help indicate if more than one reactant, product or intermediate is possible. One mark per structure or reaction condition.



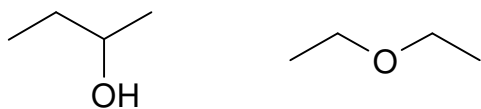


7. What is the chemical formula of:

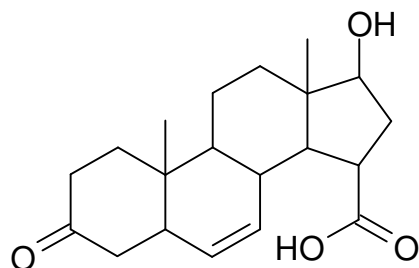


8. Is the above structure saturated? What would the formula become if it was saturated?

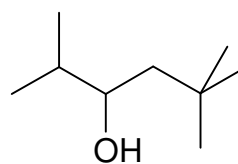
9. Are these two structures isomer? Explain



10. Write the full I.U.P.A.C. name of one of the following:



or



11.