

/60 = %

Name: \_\_\_\_\_

**Organic Chemistry - SCH 4U**  
**Reactions Test**

1. Give brief point form definitions for:

conjugated double bonds
electronic resonance
resonance stabilization
delocalized electrons

/4

Draw a common structure to which the above definitions apply. How does this affect the reactivity of the "double bonds" present in this structure? Give a specific example

/3

/7

2. Consider the reaction between an alcohols and sodium metal. In this reaction, the alcohol group must come into contact with the surface of the sodium metal in order to react. Draw in order of **DECREASING** reactivity all alcohols that are four carbons or less (total of 8 different alcohols). Label each alcohol carbon as 1°, 2° or 3° as appropriate. State the principle at work, and provide two details for this principle. Do not consider any impurities in the alcohols or alternate reaction pathways when answering this question.

3. What are the requirements for an asymmetric addition to alkenes. Write an example reaction that will result in an asymmetric addition (with two possible products).

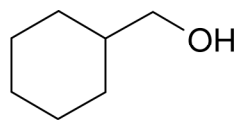
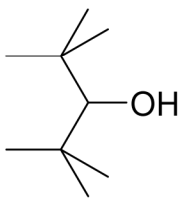
/5

4. Why are third degree alcohols non-reactive to oxidation reactions? (Hint, this does not have anything to do with steric hindrance). Explain with reference to the structure of a third degree alcohol the observed reactivity.

/3

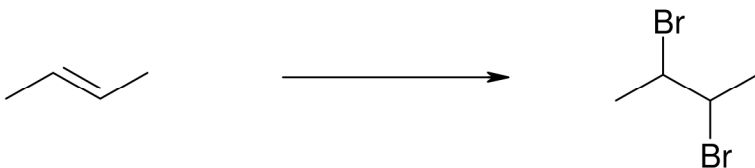
/8

5. What class of compounds will form when each of the following alcohols is oxidized?

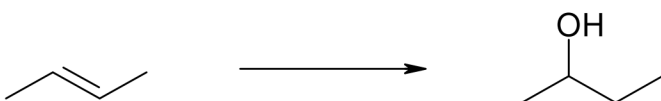


/2

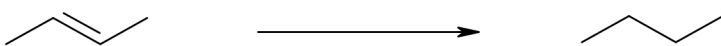
6. Complete each reaction sequence by adding products, reactants or reaction conditions as appropriate.



/1

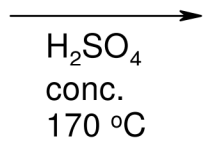
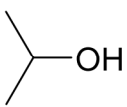


/1



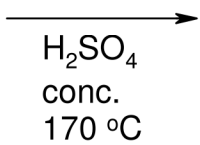
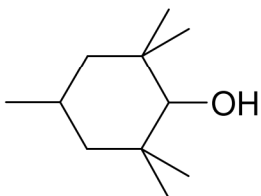
/1

/5



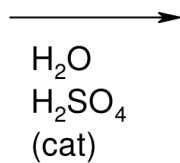
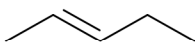
/1

---



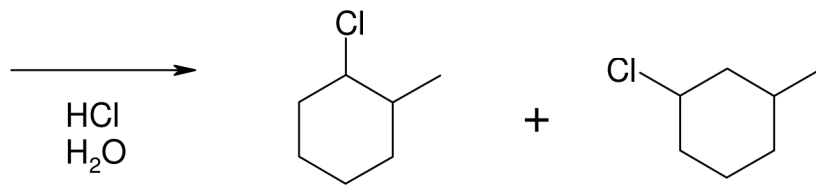
/1

---



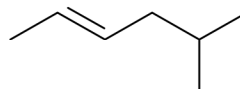
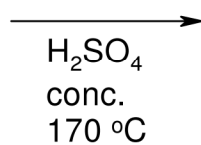
/2

---



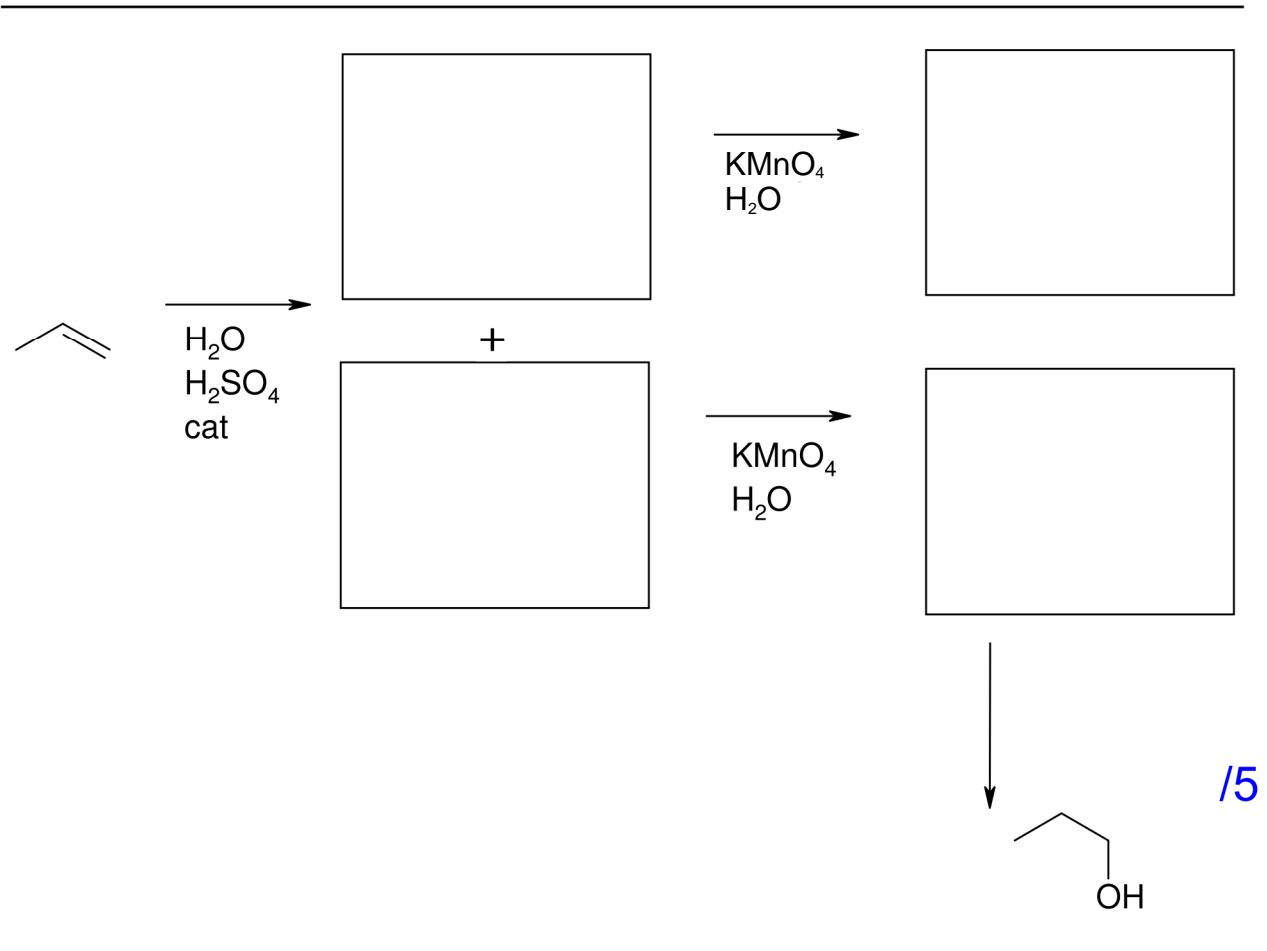
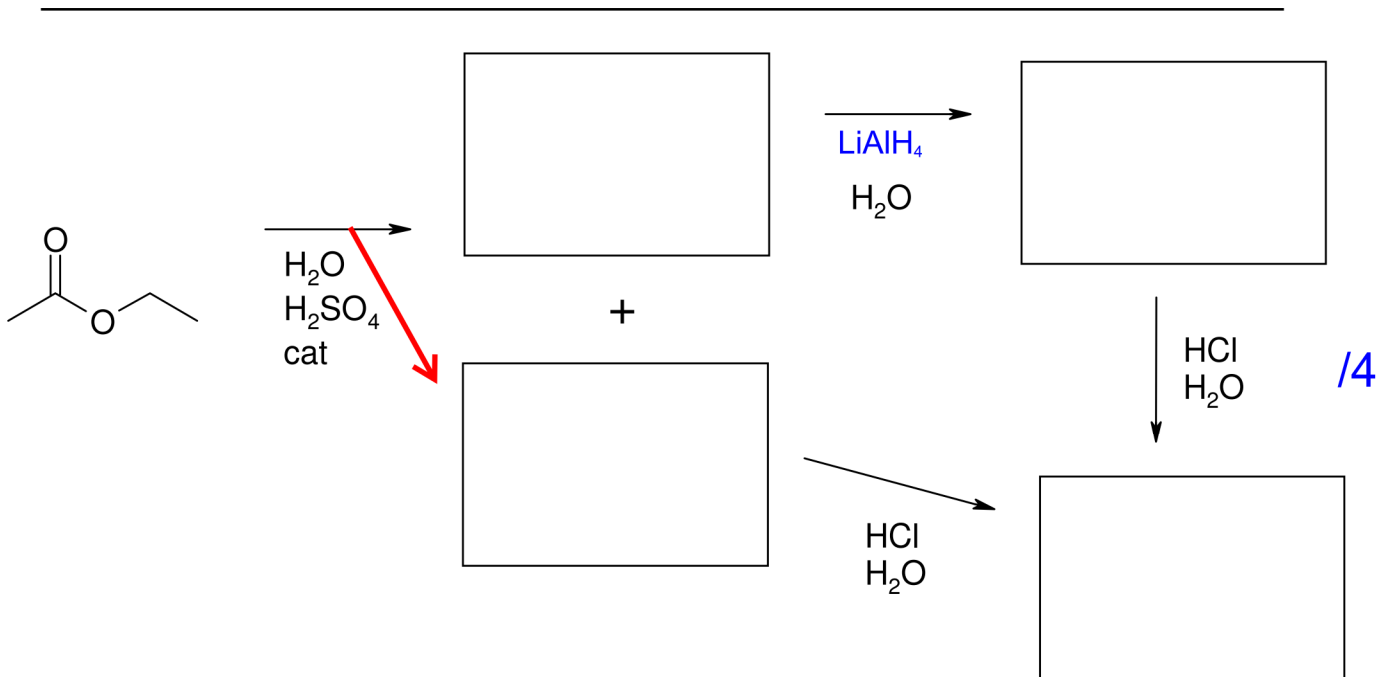
/1

---

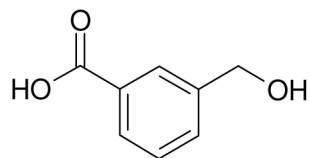


/4

---



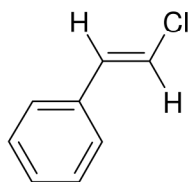
7. For the following monomers, write:
- whether the monomer will undergo an addition or condensation polymerization
  - a polymer structure that is at least four monomer units long
  - necessary reaction condition for addition reactions
  - stable by-product for condensation reactions
- It may be helpful to show all carbons and all hydrogens and draw your structure straight (as in not with a zig zag)
- 



type: \_\_\_\_\_

/4

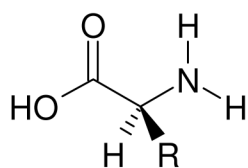
---



type: \_\_\_\_\_

/4

---



type: \_\_\_\_\_

/4

---