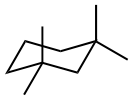
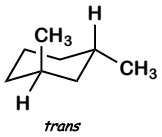
Cis-1,3-dimethylcyclohexane is more stable than *trans*-1,3-dimethylcyclohexane.



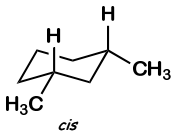
A. Very sure this is true
B. Somewhat sure this is true
C. Maybe this is true
D. Maybe this is false
E. Somewhat sure this is false
F. Very sure this is false

1

Cis-1,3-dimethylcyclohexane is more stable than *trans*-1,3-dimethylcyclohexane.



trans



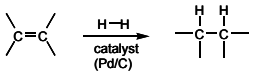
cis

A. Very sure this is true
B. Somewhat sure this is true
C. Maybe this is true
D. Maybe this is false
E. Somewhat sure this is false
F. Very sure this is false

2

How can alkanes and cycloalkanes be prepared?

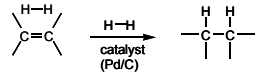
catalytic hydrogenation



3

How can alkanes and cycloalkanes be prepared?

catalytic hydrogenation

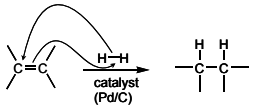


syn or cis addition of H_2.

4

How can alkanes and cycloalkanes be prepared?

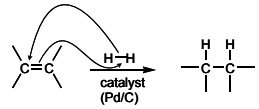
catalytic hydrogenation

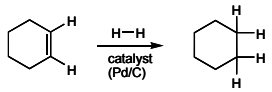


5

How can alkanes and cycloalkanes be prepared?

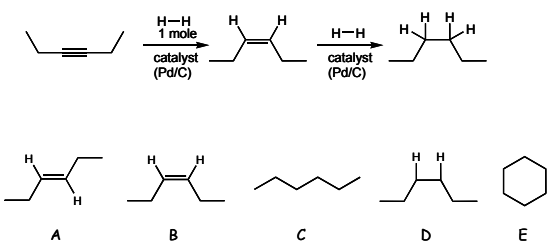
catalytic hydrogenation





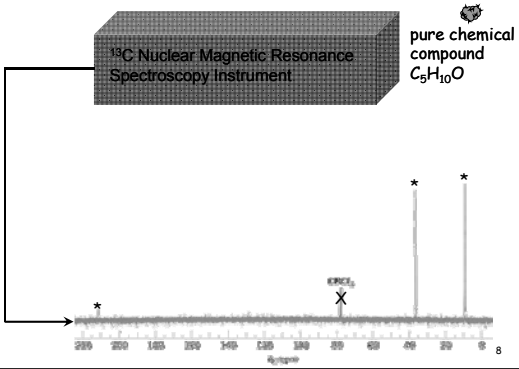
6

What is the product of the following reaction?



7

^{13}C Nuclear Magnetic Resonance Spectroscopy?



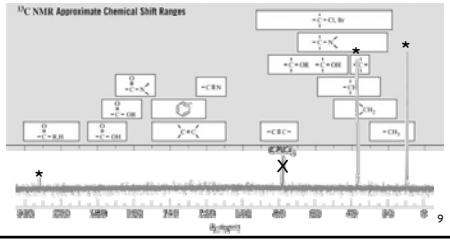
8

Give the structure of $C_5H_{10}O$.

Each chemically different carbon atom in a structure results in one absorption

The position of a carbon atom absorption depends upon its chemical environment

pure chemical compound $C_5H_{10}O$



9

Give the structure of $C_5H_{10}O$.

Each chemically different carbon atom in a structure results in one absorption

The position of a carbon atom absorption depends upon its chemical environment

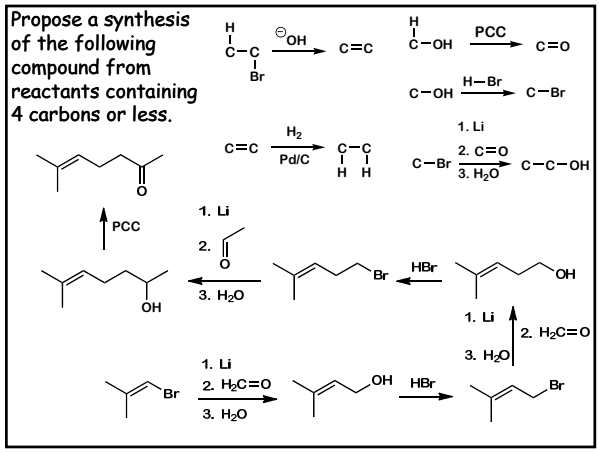
pure chemical compound $C_5H_{10}O$

10

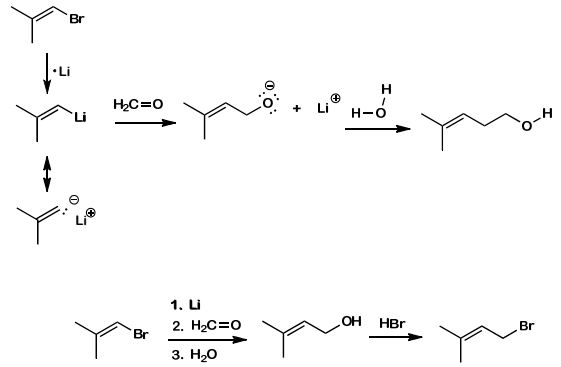
End of material for Exam 1

11

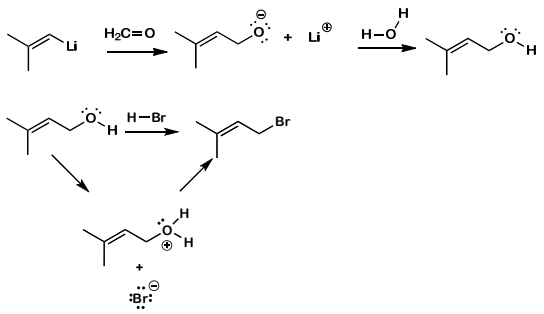
Propose a synthesis of the following compound from reactants containing 4 carbons or less.



Acid/Base: Use the curved arrow formalism to show the bond making and bond breaking in the following reactions.

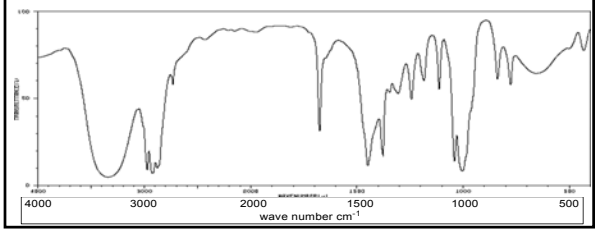


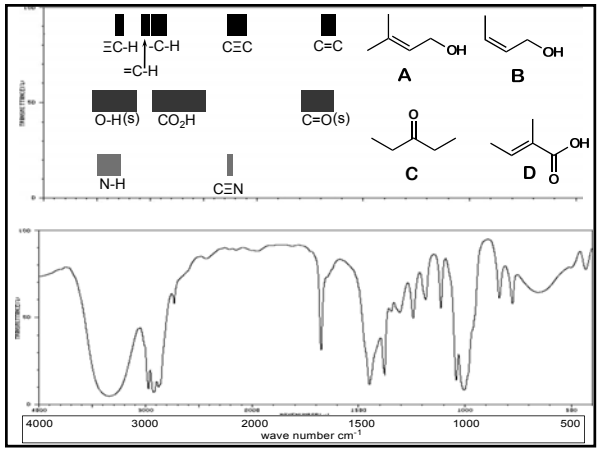
Acid/Base: Use the curved arrow formalism to show the bond making and bond breaking in the following reactions.



An unknown compound has the formula $C_5H_{10}O$ and the following ir spectrum.

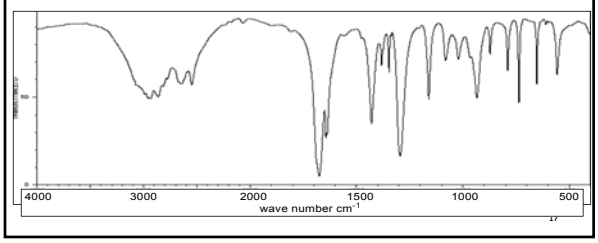
What structural information do you know about the unknown?

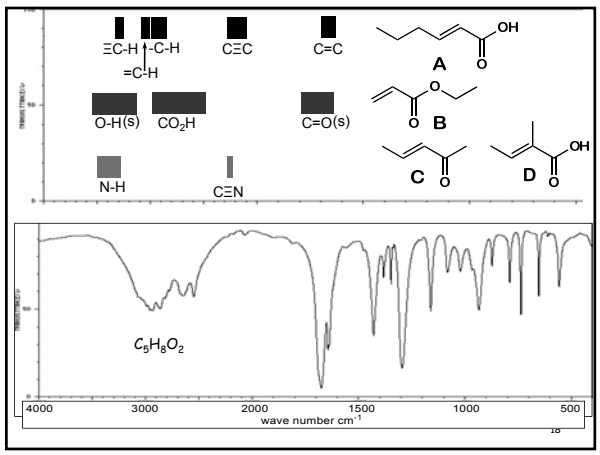




An unknown compound has the formula $C_5H_8O_2$ and the following ir spectrum.

What structural information do you know about the unknown?





Draw the two chair conformations of the following cyclohexane.

Choose the more stable structure.