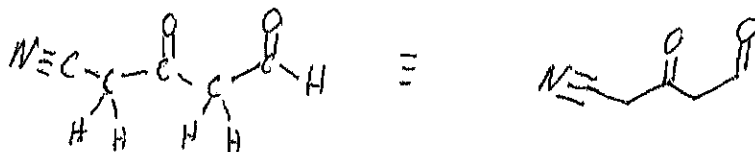


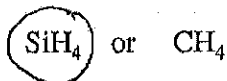
Name: Key

Organic I Lecture
Spring 2010
Quiz #1
(10 points)

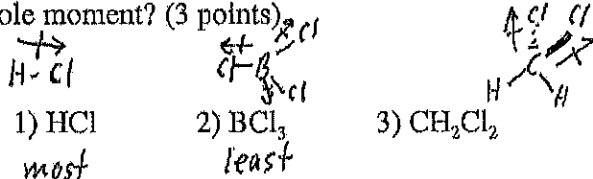
1. Convert $\text{NCCH}_2\text{COCH}_2\text{CHO}$ to a line-angle structure. (3 points, problem 1-27b)



2. Circle the stronger acid. (1 point)

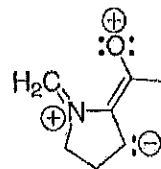
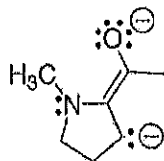
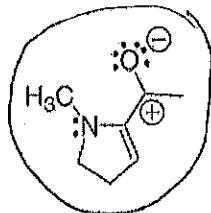
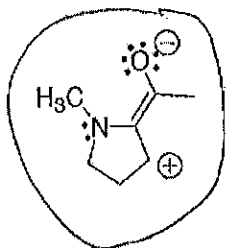
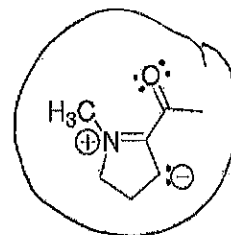
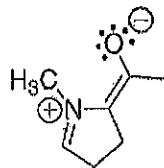
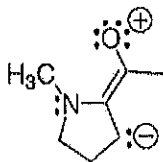
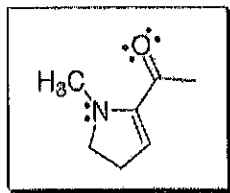


3. Which of the following sequences ranks the following compounds in order of increasing molecular dipole moment? (3 points)



- a) $1 < 2 < 3$ **b) $2 < 3 < 1$** c) $3 < 1 < 2$ d) $3 < 2 < 1$ e) $2 < 1 < 3$ f) $1 < 3 < 2$

4. Circle all resonance structures of the boxed structure below. (3 points)



Name: Key

Organic I Lecture
Spring 2011
Quiz #1
(10 points)

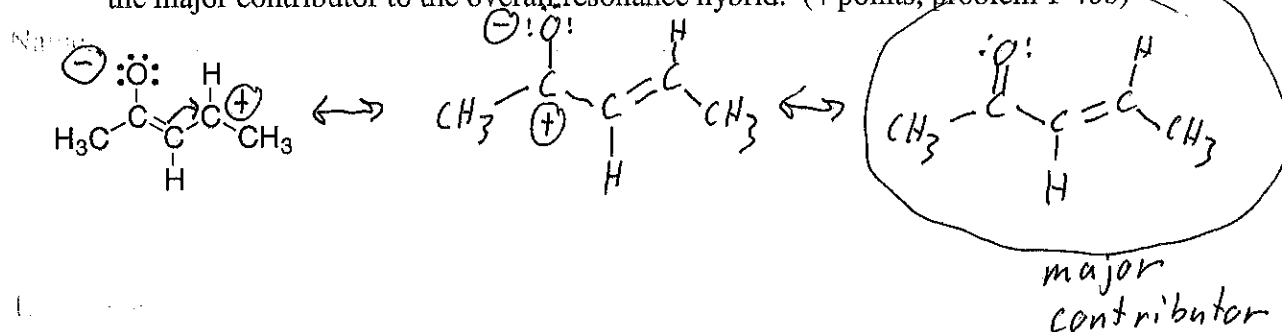
1. Circle the compound below that is the stronger base. (2 points)

PH₃ or

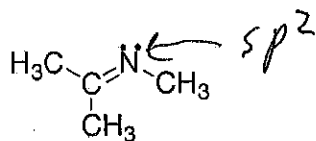


Periodic Trend for basicity
← C N O ↑
P

2. Fill in any missing formal charges in the structure below. Then draw the structure that is the major contributor to the overall resonance hybrid. (4 points, problem I-40b)



3. What is the hybridization of nitrogen in the following structure? (2 points)



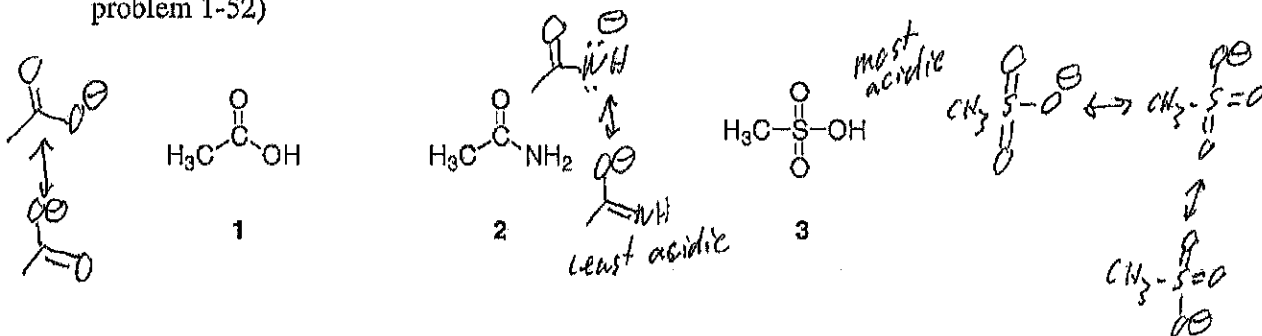
4. What intermolecular attractions are present in a pure solution of the compound in problem #3? (2 points)

London Dispersion
Dipole-dipole attraction

Name: Key

Organic I Lecture
Spring 2012
Quiz #1
(10 points)

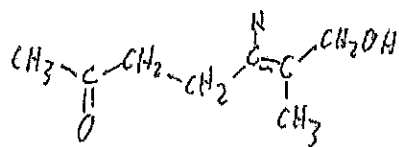
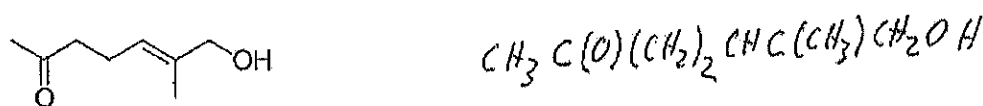
1. Which sequence ranks the following structures in order of decreasing acidity? (3 points, problem 1-52)



- a) 1<2<3 b) 2<3<1 c) 3<1<2 d) 3<2<1 e) 2<1<3 f) 1<3<2

2. If a carbon center has a trigonal planar geometry, then the hybridization of the carbon is sp² and the bond angle between groups of electrons is 120°. (2 points)

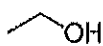
3. Convert the following line-angle structure to a condensed structure. (3 points)



4. What intermolecular attractions exist in a solution of acetone and ethanol? (2 points)

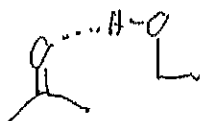


acetone



ethanol

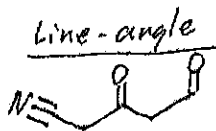
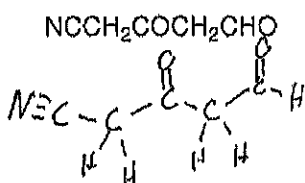
London Dispersion
dipole-dipole
Hydrogen bonding



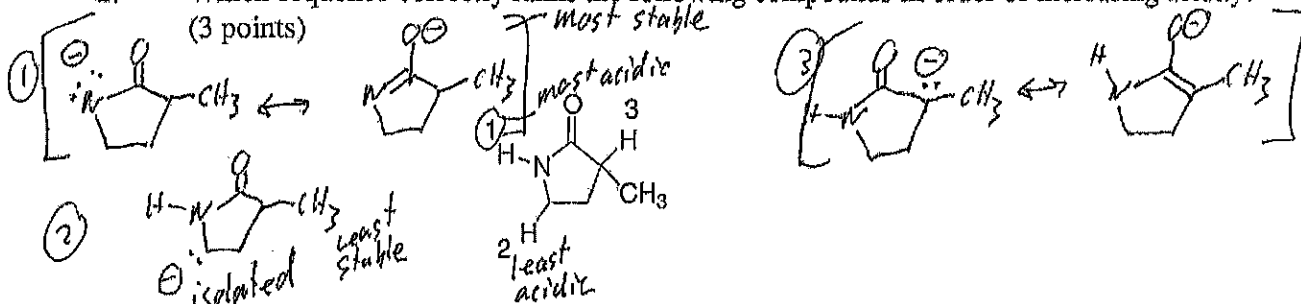
Name: Key

Organic I Lecture
Fall 2012
Quiz #1
(10 points)

1. Draw a line-angle structure for the following compound. (3 points, problem 1-27b)



2. Which sequence correctly ranks the following compounds in order of increasing acidity? (3 points)



- a) $1 < 2 < 3$ **b) $2 < 3 < 1$** c) $3 < 1 < 2$ d) $3 < 2 < 1$ e) $2 < 1 < 3$ f) $1 < 3 < 2$

3. What functional group is represented in the structure in question #2? (2 points)

amide

4. How many degrees of unsaturation are in $\text{C}_9\text{H}_{14}\text{N}_2\text{O}_3$? (2 points)

$$2N + 2 \quad N = +1$$
$$2(9) + 2 + 2 = 22 \text{ for sat.}$$

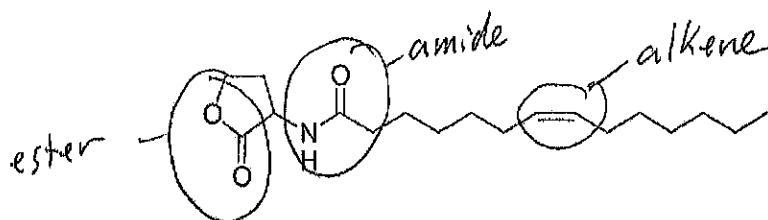
$$\begin{array}{r} 22 \\ -14 \\ \hline 8 \text{ Hs} \\ \text{short} \end{array}$$

$$8/2 = 4^\circ \text{ unsat.}$$

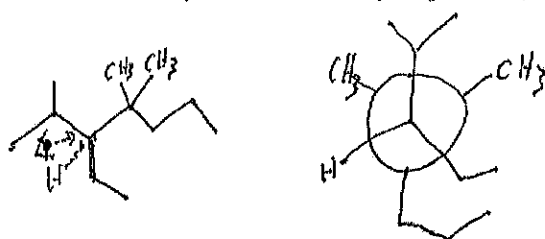
Name: Key

Organic I Lecture
Spring 2010
Quiz #1
(10 points)

1. The following compound is a natural product produced by bacteria infected orange trees. Circle and name the functional groups in the following structure. (3 points)

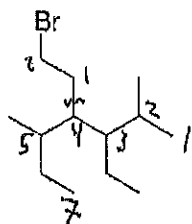


2. Draw a Newman projection along the C3-C4 bond to show the most stable conformation of 3-ethyl-2,4,4-trimethylheptane. (3 points, problem 3-47)



3. Circle the correct IUPAC name for the structure below. (3 points)

4-(2-bromoethyl)-3-ethyl-2,5-dimethylheptane



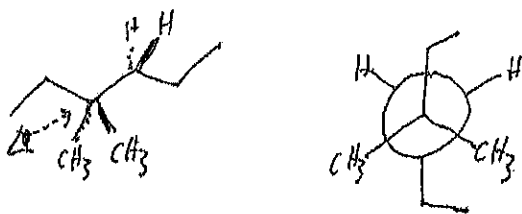
- a) 4-(2-bromoethyl)-3,5-diethyl-2-methylhexane
b) 1-bromo-3-ethyl-4-isopropylhexane
c) 4-(2-bromoethyl)-3-isopropyl-5-methylheptane
d) 4-(2-bromoethyl)-2,5-dimethyl-3-ethylheptane
e) 4-(2-bromoethyl)-3-ethyl-2,5-dimethylheptane

4. Torsion strain occurs when groups of bonding electrons are eclipsed. (1 points)

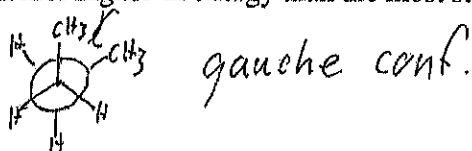
Name: Key

Organic I Lecture
Spring 2011
Quiz #2
(10 points)

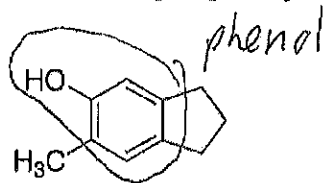
1. Use a Newman projection, about the C3-C4 bond, to draw the most stable conformer for 3,3-dimethylhexane. (3 points, problem 3-42b)



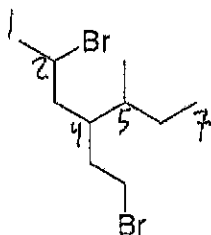
2. What is the name of the conformer of butane, sighting down the C2-C3 bond, that is 0.9 Kcal/mol higher in energy than the most stable conformation? (2 points)



3. What functional group is represented in the following compound? (2 points)



4. Identify the correct systematic name for the following compound, (3 points)



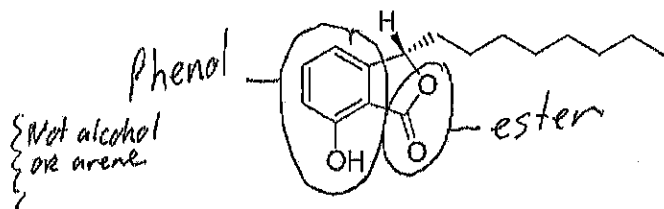
- a) 6-bromo-4-(2-bromoethyl)-3-methylheptane
- b) 1,5-dibromo-3-s-butylhexane
- c) 4-s-butyl-2,6-dibromohexane
- d) 2-bromo-4-(2-bromoethyl)-5-methylheptane
- e) 4-(3-bromoethyl)-2-bromo-5-methylheptane

2-bromo-4-(2-bromoethyl)-5-methylheptane

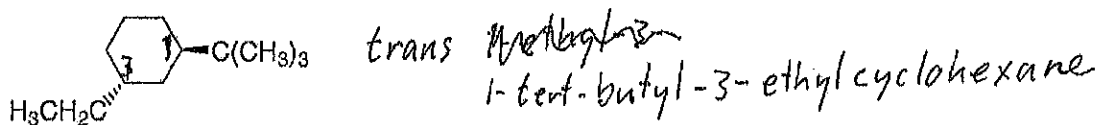
Name: Key

Organic I Lecture
Fall 2011
Quiz #2
(10 points)

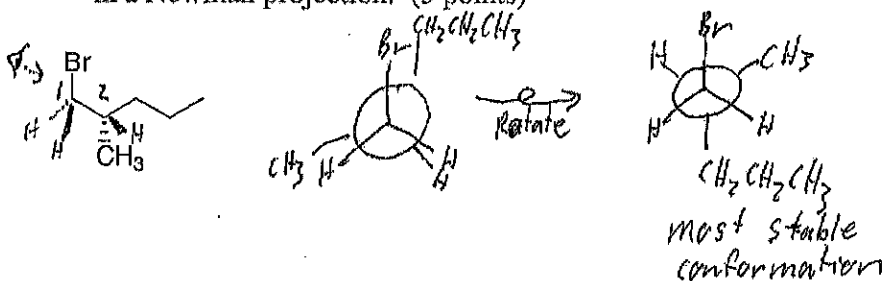
1. The following compound is produced by a jellyfish derived fungus and has been shown to have anti-biotic activity (*J. Nat. Prod.* 2011, 1826) Circle and name the functional groups in the structure below. (2 points)



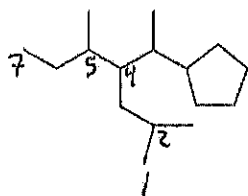
2. Provide an IUPAC name for the following compound. (2 points, problem 3-17b)



3. Siting down the C1-C2 bond, draw the following structure in its most stable conformation in a Newman projection. (3 points)



4. Identify the correct IUPAC name of the following compound (3 points)



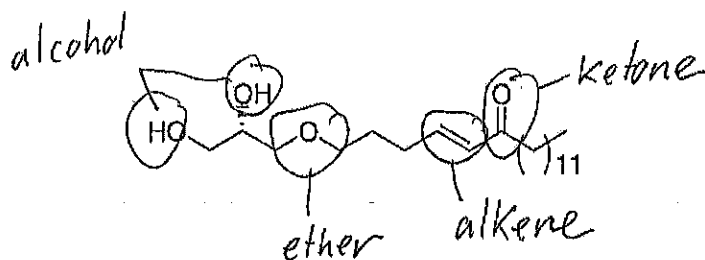
- a) 4-(1-cyclopentylethyl)-3,6-dimethylheptane
 b) 1-cyclopentyl-3-isobutyl-2,4-dimethylhexane
 c) 3-sec-butyl-2-cyclopentyl-5-methylhexane
 d) 4-(1-cyclopentylethyl)-2,5-dimethylheptane
 e) 2-cyclopentyl-3-isobutyl-4-methylhexane

4-(1-cyclopentylethyl)-2,5-dimethylheptane

Name: Key

Organic I Lecture
Spring 2012
Quiz #2
(10 points)

1. The following component isolated from *Niphates digitalis*, a marine sponge, has shown strong activity against late stage prostate cancer (*J. Med. Chem.* **2012**, 503). Circle and name each different functional group in the compound below. (4 points)



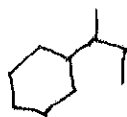
2. What causes torsion strain? (1 points)

Electron repulsion from eclipsed bonding electrons



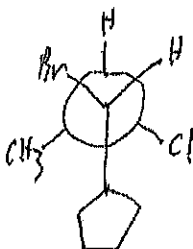
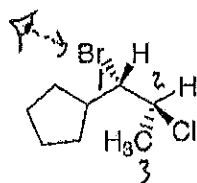
3. The following name is incorrect. Draw the structure and provide a correct systematic name for the structure. (2 points, problem 3-39e)

2-cyclohexylbutane



sec-butylcyclohexane
OR 1-methylpropylcyclohexane

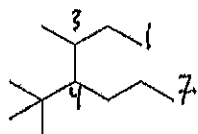
4. Siting down the C1-C2 bond, translate the following perspective structure into a Newman projection without changing the conformation. (3 points)



Name: Key

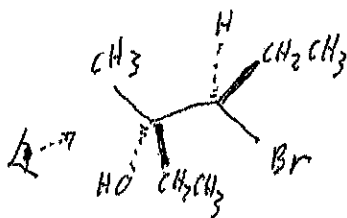
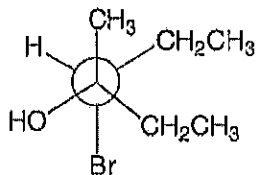
Organic I Lecture
Fall 2012
Quiz #2
(10 points)

1. Provide an IUPAC name for the following compound. (3 points, problem 3-4f)

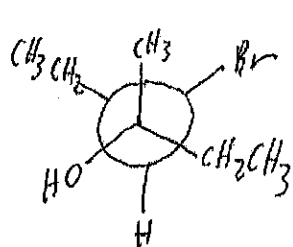


4-*t*-butyl-3-methylheptane

2. Without changing conformations, translate the following Newman projection to a wedge-dash structure (3 points)

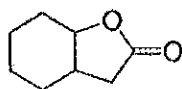


3. Draw the Newman projection in question #2 in its most stable conformation. (2 points)



Large groups anti

4. What functional group is contained in the following structure? (2 points)



ester