Name _____________________________

ORGANIC CHEMISTRY CH 351-03 (Wilson)
Exam #1
September 16, 2004

Problem 1 _______  (24)
Problem 2 _______  (16)
Problem 3 _______  (12)
Problem 4 _______  (12)
Problem 5 _______  (24)
Problem 6 _______ (12)
E. C. _________  (3)

TOTAL ________  (100)

“"I'm after a longer dipstick. This one doesn't reach the oil anymore."

“In the time of chimpanzees, I was a monkey
Butane in my veins and I'm out to cut the junkie” -Beck, Loser
1. a. Circle and identify the functional groups in the following molecule. (Don’t be confused by the arrows…they are pointed at specific atoms for part b.) (14 pts)

b. Identify the hybridization and shape of five of the indicated atoms a - f. (The indicated atoms have arrows pointed at them.) (10 pts)
(16 pts) 2. Draw one GOOD Lewis structure AND one GOOD resonance form for each of the following molecules. (8 pts each)

a. \((\text{CH}_3)_2\text{CCN}^\ominus\)

b. \(\text{CH}_3\text{CHC(\text{CH}_3)CHCH}_2\text{CH}_3^\ominus\)

(12 pts) 3. Name or draw the following compounds:

a. 

b. 3-cyclopropyl-4-isobutyloctane (draw)

c. \(\text{CH}_3\text{CH(\text{Me})CH(iBu)CH}_2\text{CH(Et)CH}_3\) (name)

d. 

(12 pts) 4. Name the following compound. Draw a constitutional/structural isomer of it and name the isomer.

(24 pts) 5. Identify the relationship between 6 of the 7 of the following pairs of compounds. You may choose from same thing, different compound, resonance forms, constitutional/structural isomers and geometric isomers.

a. \[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{iBu} \\
\text{iBu} \\
\text{Et} \\
\text{Cl} \\
\text{Me}
\end{array}
\]
and 2-chloro-3-ethyl-5-methylhexane

b. \[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{CHClCH}_3 \\
\text{CH}_3 \\
\text{CH}_3CH_2 \\
\text{H} \\
\text{H}
\end{array}
\]
and

\[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{iBu} \\
\text{iBu} \\
\text{Et} \\
\text{Me} \\
\text{Cl}
\end{array}
\]

c. \[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{H} \\
\text{H} \\
\text{H}
\end{array}
\]
and \[
\begin{array}{c}
\text{C}_7H_{16}
\end{array}
\]
d. and 2, 4-dimethylheptane

e. cis-1-chloro-1-propene and

f. Br

Me and

iPr

Me

g. Br

Me

iPr and

Br

Me

(12 pts) 6. Draw all the staggered Newman projections of 3,4-dimethyl-1-heptene from the perspective of the C3-C4 bond.

(3 pts) Extra Credit.

Name one of the named hurricanes or tropical storms from the 2004 (like, right now) season.