Name_____

CHM 2001 - Organic Chemistry I

Quiz I – Thursday 23 September 2010

Professor Parikh

Please read through each problem carefully and enter your answer in the box provided. A periodic table is provided at the end of the exam with additional scrap paper.

- the exam is closed book (no book or notes allowed)
- you may not refer to your cellular phone or pager (please turn them off)
- You may use your model set (there is no borrowing or leading of model sets)

A note about drawing structures: ***You should use line structures; make your drawings as clear as possible to understand - stereochemistry should be indicated unambiguously using conventional drawing techniques (eg. bold wedges and dashes).***

Problem 1	_____/ 20 pts
Problem 2	_____/ 6 pts
Problem 3	_____/ 6 pts
Problem 4	_____/ 8 pts
TOTAL	/ 40 points

Problem 1: Give the letter of the term that best matches the given definitions below (20 points; 2 points each). Provide the answers in the box provided on the bottom page.

a. Brønsted-Lowry Acid
b. Brønsted-Lowry Base
c. Lewis Acid
d. Lewis Base
e. Electronegativity
f. Ionic Bond
g. Covalent Bond
h. Polar-Covalent Bond
i. Hydrophobic
j. Hydrophilic

1. Any species that can accept electrons.

2. A bond between two atoms differing in electronegativity by 0.5 – 2.

3. A term used to describe a “water loving” species.

4. A compound that can donate a proton.

5. The ability of an atom to attract the shared electrons in a covalent bond.

6. A term used to describe a “water fearing” species.

7. Any species that can donate electrons.

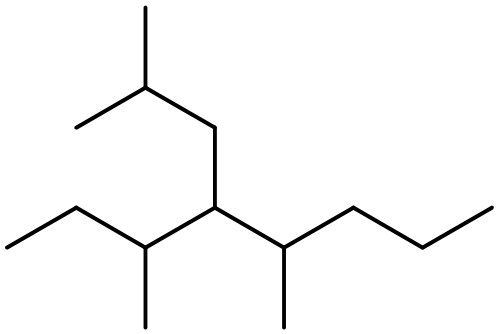
8. A bond between two atoms differing in electronegativity by < 0.5

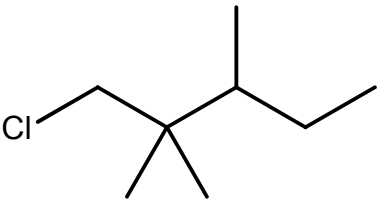
9. A compound that can accept a proton.

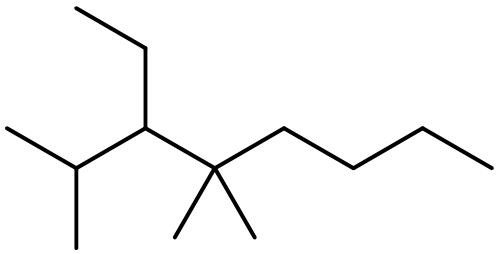
10. A bond between two atoms differing in electronegativity by > 2.

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.

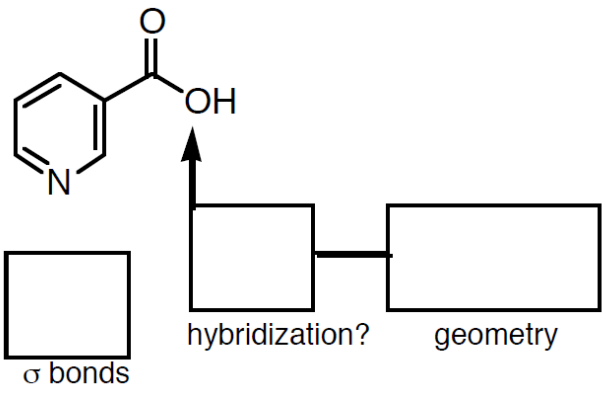
Problem 2: Provide the IUPAC name for the following compounds (6 points; 2 points each):

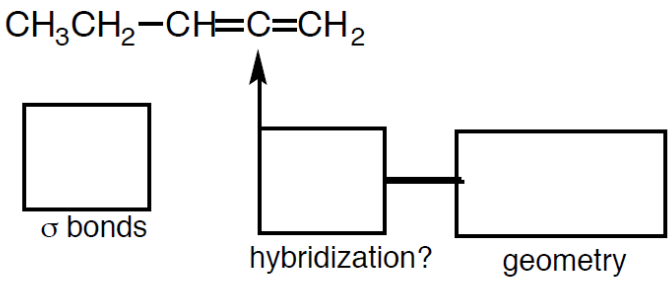






Problem 3: For the following compounds, determine the number of sigma bonds, and indicate the hybridization and geometry of the specified atoms. (6 points; 1 point each).





Problem 4: The energy diagram below shows the energy change in the conformations of 2,3-dimethylbutane as the C2-C3 bond is rotated. Each extreme in energy is marked with a letter. In the box below each conformation place the letter that corresponds to that extreme. (8 points; 2 points each).