Chemistry 333

Hour Examination #1

February 27, 1998 Professor Charonnat

Name: _____

Be certain that your examination has five (5) pages including this one.

Put your name on **each** page of this examination booklet.

By putting your name on this examination booklet you agree to abide by
California State University, Northridge policies of academic honesty and integrity.

Name:_____

1. (15 points)

Draw all important resonance structures for sodium hydrogen phosphate, Na_2HPO_4.
Indicate all formal charges clearly.

2. (20 points)

A. Describe what happens on a molecular level when an ionic solid dissolves in water.

B. Describe what happens on a molecular level when a nonpolar covalent solid dissolves in a nonpolar solvent.

Name:_____

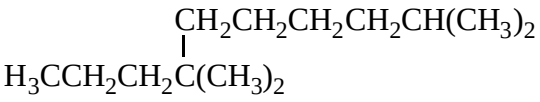
3. (20 points)

Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Draw **all** intermediates and denote **all** lone pair electrons and unpaired electrons. Clearly show at least two termination steps.

Name:_____

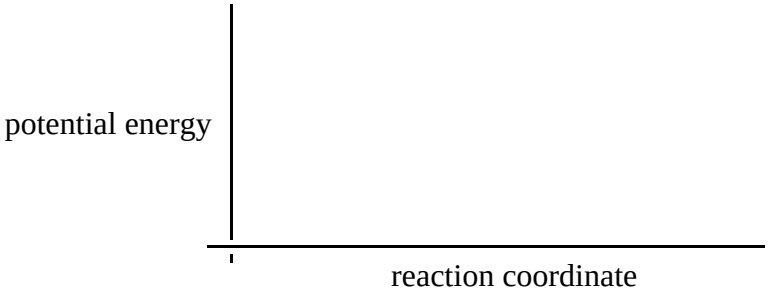
4. (10 points)

Use IUPAC nomenclature to write the systematic name of the following alkane.

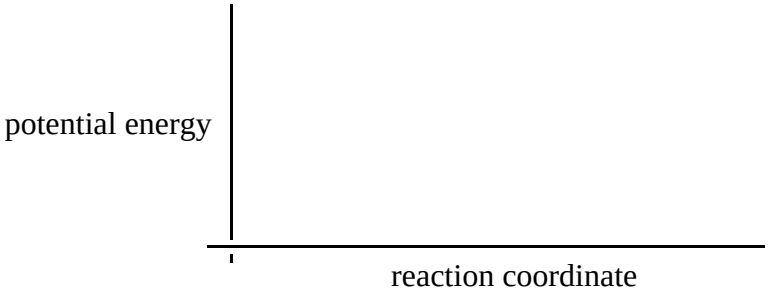


5. (20 points)

A. Describe what is meant by the term, "early transition state". Sketch a potential energy vs. reaction coordinate diagram to illustrate your answer.



B. Describe what is meant by the term, "late transition state". Sketch a potential energy vs. reaction coordinate diagram to illustrate your answer.



Name:_____

6. (15 points)

State in three sentences or less why the boat conformation of cyclohexane is less stable than the corresponding chair conformation. Draw three-dimensional pictures of each conformation to illustrate your answer. Indicate clearly all problematic torsional and steric interactions.

Congratulations!

1	/15
2	/20
3	/20
4	/10
5	/20
6	/15
Total:	/100