

Chemistry 334

Final Examination

December 15, 2014

Professor Charonnat

Name: _____

Be certain that your examination has nine (9) 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.

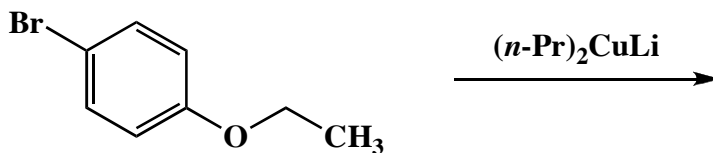
Molecular models are allowed for this examination. All electronic devices, including calculators, are unnecessary and are not allowed.

Name: _____

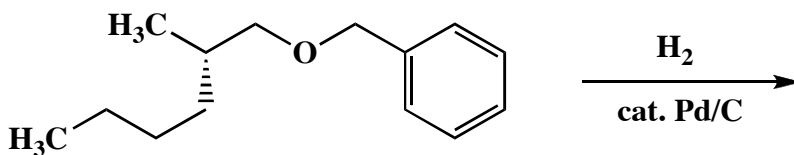
1. (50 points)

Draw the structure of the expected major organic product for each of the following ten (10) questions. Specify stereochemistry clearly, if relevant.

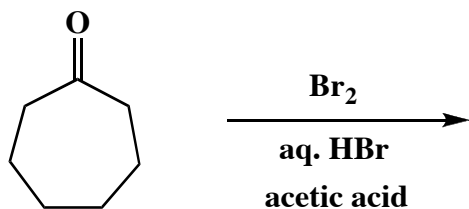
A.



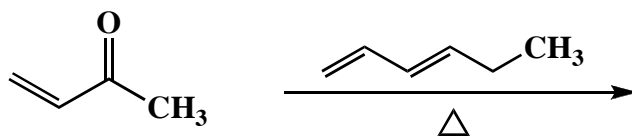
B.



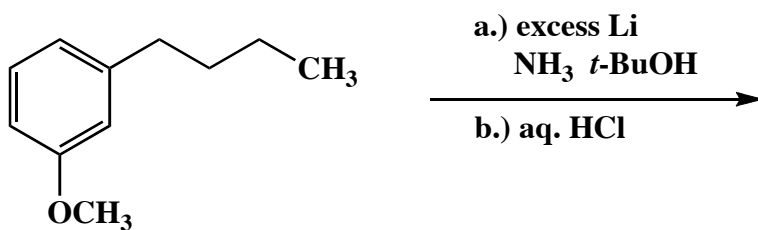
C.



D.



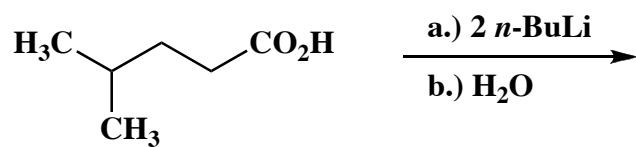
E.



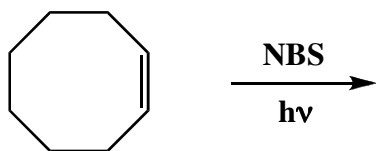
Name: _____

1. (continued)

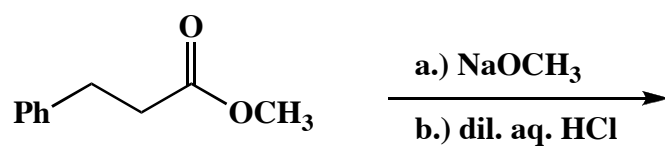
F.



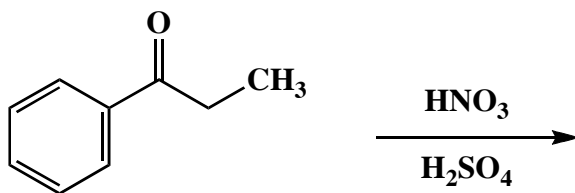
G.



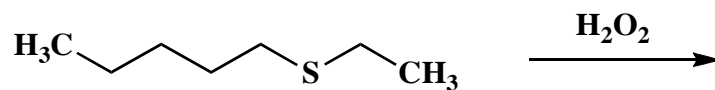
H.



I.



J.

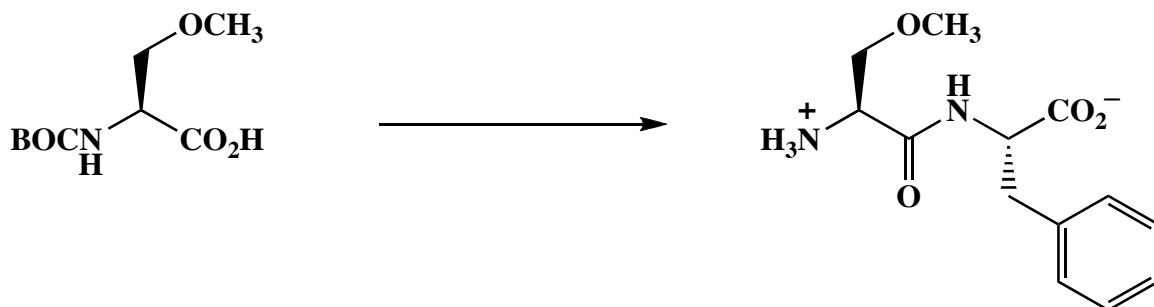


Name: _____

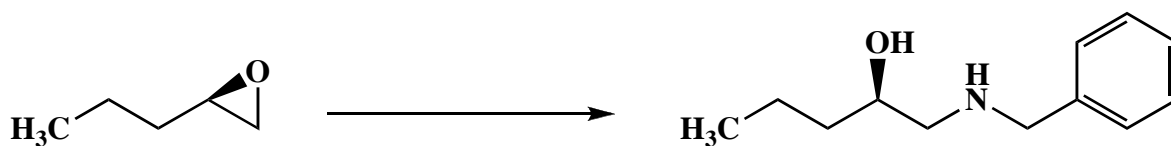
2. (25 points)

Draw the specific reagent(s) necessary to effect the following three (3) transformations. If more than one reaction is involved in an answer, be certain to distinguish the individual steps clearly.

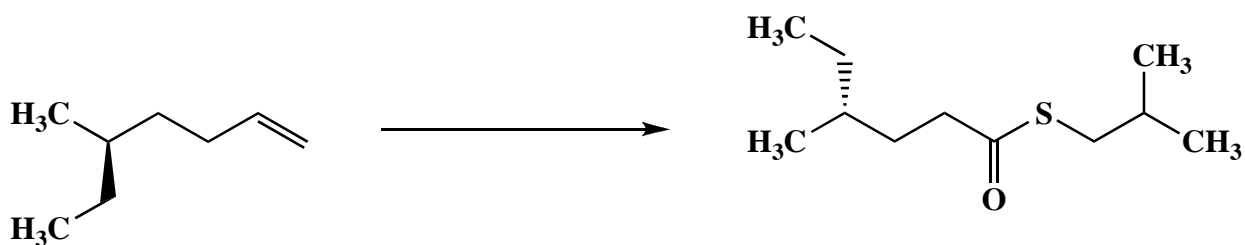
A.



B.



C.



Name: _____

3. (50 points)

Circle the letter that corresponds to the correct answer for each of the following ten (10) questions.

This question is not available due to copyright considerations.

Name: _____

4. (25 points)

Draw the structure of a specific example for each of the following twelve (12) categories.

A. any naturally-occurring wax:

B. any naturally-occurring, neutral α -amino acid:

C. any γ -amino acid:

D. any unnatural saturated fatty acid:

E. any naturally-occurring polyunsaturated fatty acid:

F. any addition copolymer:

G. any condensation homopolymer:

H. any prostaglandin:

I. any steroid:

J. any organic compound that will form a bilayer in water:

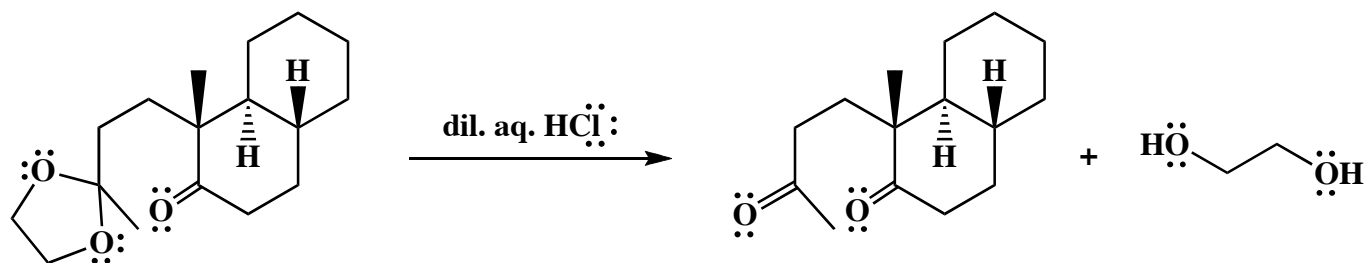
K. any D-ketopentose (drawn as a Fischer projection):

L. any disaccharide with a β -1,4' glycosidic bond:

Name: _____

5. (25 points)

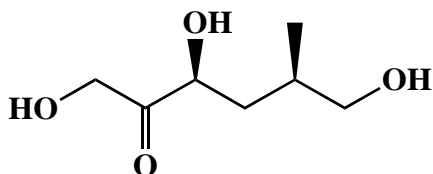
Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Show all intermediates and denote all unshared electrons, nonzero formal charges, countercharges, and reversibility or irreversibility.



Name: _____

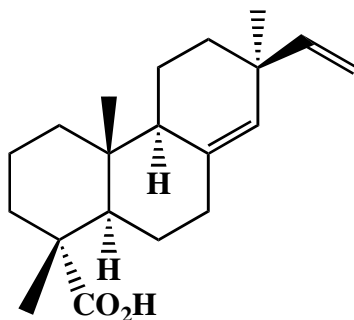
6. (10 points)

Use IUPAC nomenclature to write the systematic name of the following carbonyl compound.



7. (15 points)

The following terpene is found in the European pine tree, *Pinus silvestris*. Circle the "isoprene" units in this terpene. Label the head (h) and tail (t) of each "isoprene" unit clearly. Finally, state (+)-pimaric acid's terpene classification.



(+)-pimaric acid

classification: _____

Congratulations!

1	/50
2	/25
3	/50
4	/25
5	/25
6	/10
7	/15
Total:	/200