

Chemistry 333

Examination #2

October 22, 2007

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.

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

Name: _____

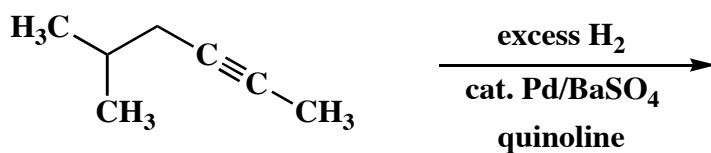
1. (25 points)

Denote the major organic product for each of the following five (5) questions. Specify stereochemistry clearly, if relevant.

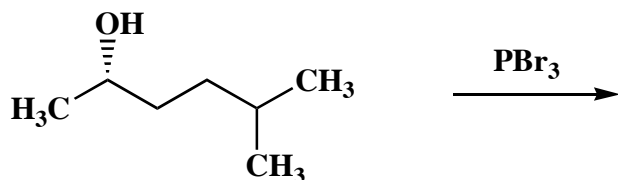
A.



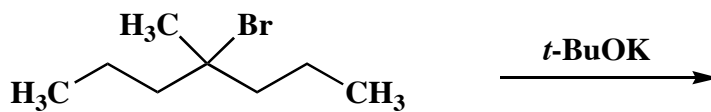
B.



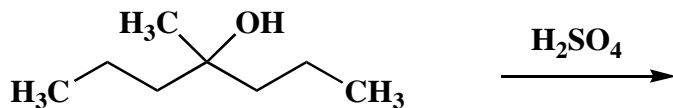
C.



D.



E.



Name: _____

2. (25 points)

Circle the number that corresponds to the correct answer for each of the following five (5) questions.

A. The specific rotation of (*S*)-butan-2-ol is $+13.5^\circ$. The specific rotation of (*R*)-butan-2-ol is

1. $+27.0^\circ$
2. -13.5°
3. 0°

B. Nucleophilic substitutions of primary alkyl halides

1. usually proceed with second-order kinetics
2. always proceed with first-order kinetics
3. usually proceed with first-order kinetics

C. Which of the following alkenes is the most stable?

1. oct-1-ene
2. 2-methyloct-1-ene
3. 2-methyloct-2-ene

D. The transition state of an S_N2 reaction has

1. linear geometry
2. tetrahedral geometry
3. trigonal bipyramidal geometry

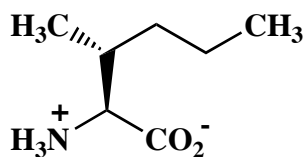
E. Which of the following reactions exhibits "hydrogen exchange"?

1. E1
2. E1cB
3. E2

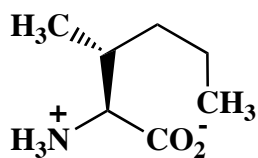
Name: _____

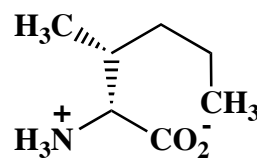
3. (30 points)

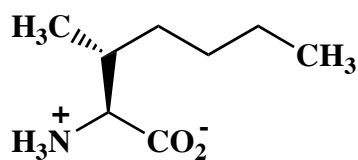
State the relationship between each of the following six (6) structures and the amino acid **1** (identical, enantiomer, diastereomer, structural isomer, conformational isomer, or different compound that is not isomeric).

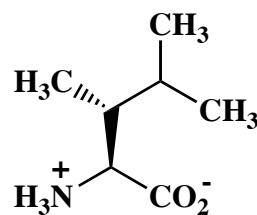


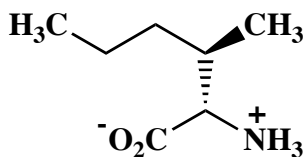
1

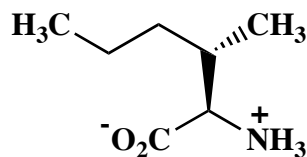








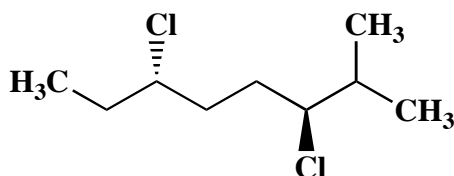




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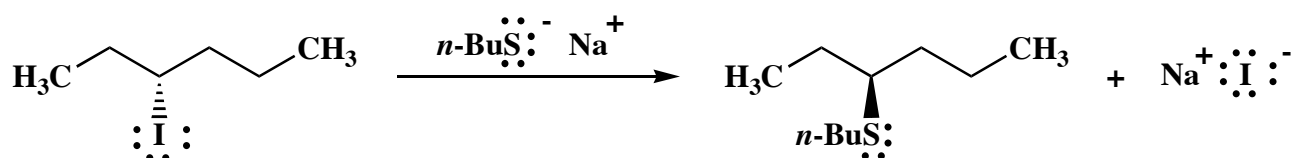
4. (10 points)

Use IUPAC nomenclature to write the systematic name of the following alkyl halide.



5. (10 points)

Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. State clearly why the observed stereochemical result is obtained.



Congratulations!

1	/25
2	/25
3	/30
4	/10
5	/10
Total:	/100