

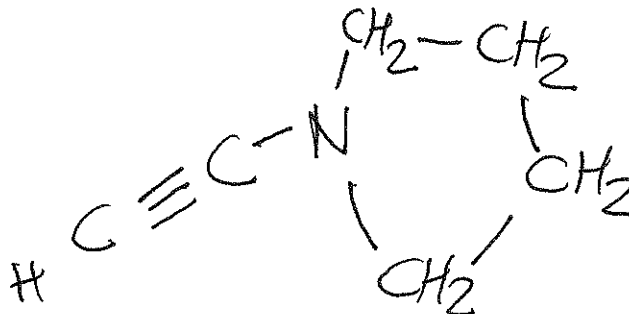
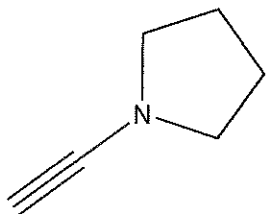
key

Name _____

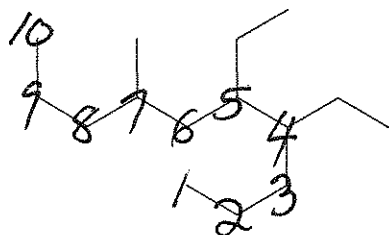
Lab Instructor Belyayeva Chiemezie Gozde Khajo Mollica

Quiz Ia
February 22, 2017

- pts
- ↓
- 3
1. Convert the following molecule from line bond notation to a Lewis structure that shows all the carbon and hydrogen atoms.

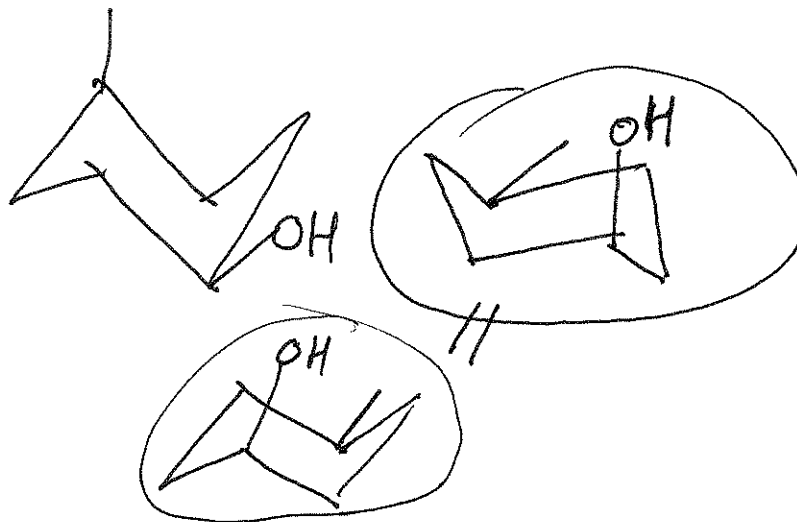
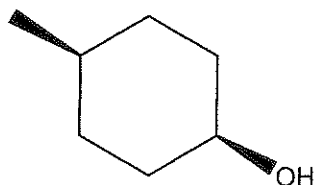


2. What is the official IUPAC name of the following molecule?



4,5-diethyl-7-methyl decane

3. Draw both chair forms of the molecule shown below and circle the one that is lower in energy.



← this question was more difficult than intended
I will grade it more leniently

Name

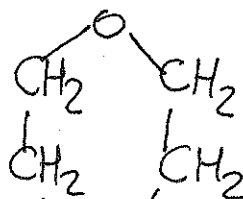
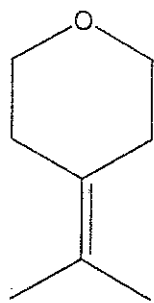
key

Lab Instructor Belyayeva Chiemezie Gozde Khajo Mollica

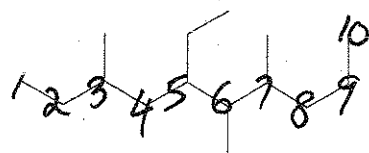
Quiz Ib

February 22, 2017

1. Convert the following molecule from line bond notation to a Lewis structure that shows all the carbon and hydrogen atoms.



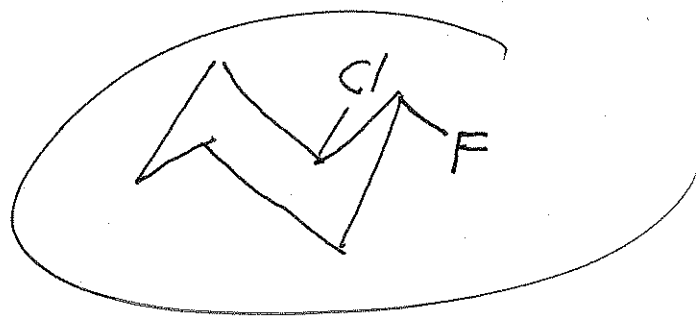
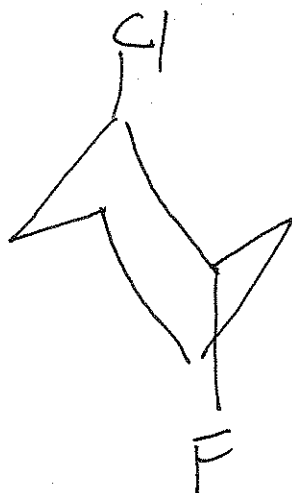
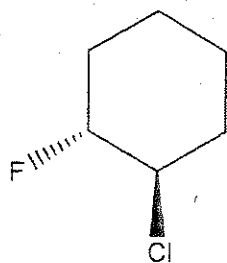
2. What is the official IUPAC name of the following molecule?



5 ethyl
3,6,7 trimethyl

decane

3. Draw both chair forms of the molecule shown below and circle the one that is lower in energy.



key

Name _____

Lab Instructor Belyayeva Chiemezie Gozde Khajo Mollica

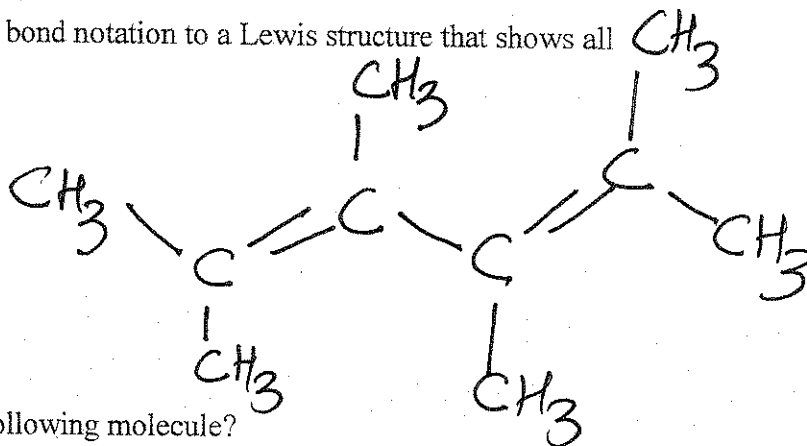
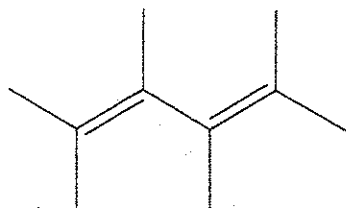
Quiz Ic
February 22, 2017

pts

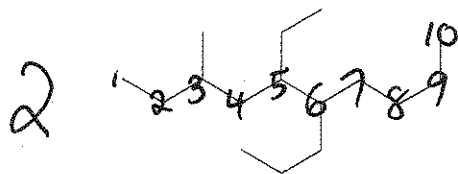
↓

3

1. Convert the following molecule from line bond notation to a Lewis structure that shows all the carbon and hydrogen atoms.



2. What is the official IUPAC name of the following molecule?

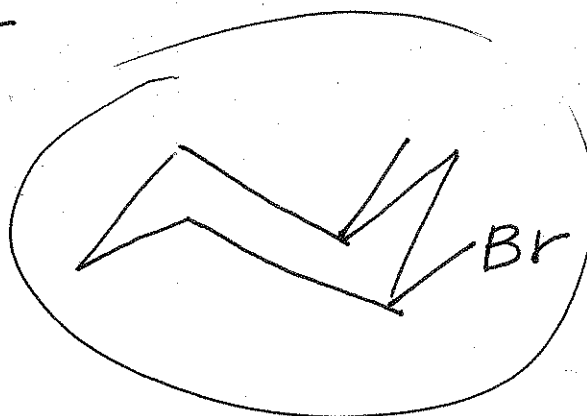
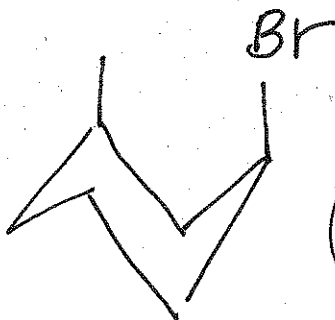
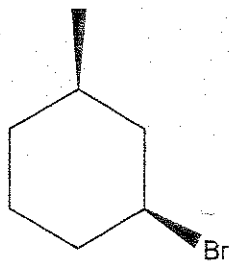


5 ethyl-

3-methyl-~~5,6-diethyl~~ ^{6 propyl} decane

3. Draw both chair forms of the molecule shown below and circle the one that is lower in energy.

5

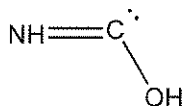


Name _____

Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

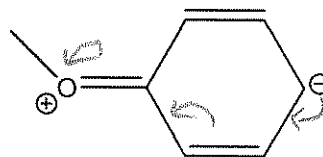
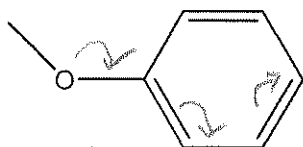
Quiz IIa
March 1, 2017

- pts
↓
1. What is the formal charge on the C atom in the molecule shown below?

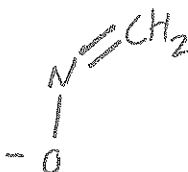
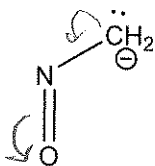


-1

2. Two resonance forms of the same molecule are shown below. Draw arrows to show how the structure on the left would convert to the structure on the right and how the structure on the right would convert to the structure to the left.



- 3a. Draw a resonance structure for the molecule shown below.
3b. If your resonance structure has any formal charges, be sure to show them clearly.



Name _____

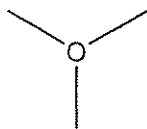
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

pts

Quiz IIb
March 1, 2017

1. What is the formal charge on the O atom in the molecule shown below?

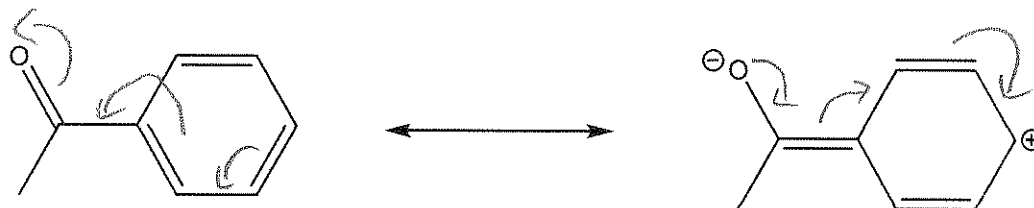
2



+1

2. Two resonance forms of the same molecule are shown below. Draw arrows to show how the structure on the left would convert to the structure on the right and how the structure on the right would convert to the structure to the left.

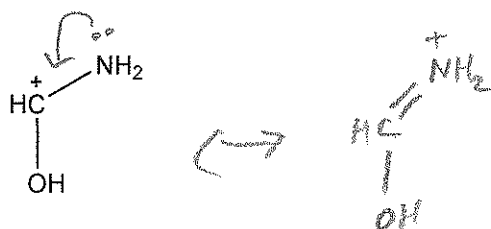
4



- 3a. Draw a resonance structure for the molecule shown below.

- 3b. If your resonance structure has any formal charges, be sure to show them clearly.

4



or

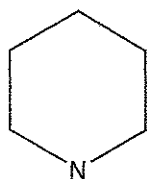


Name _____

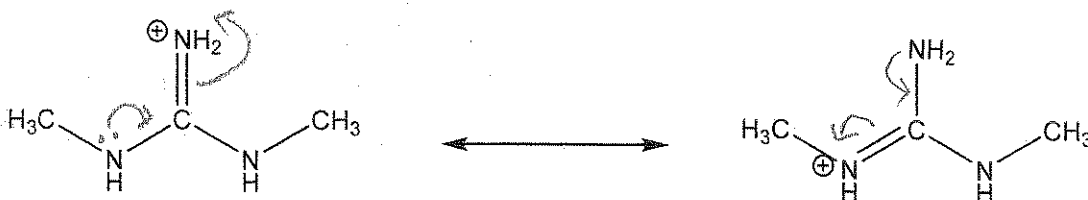
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IIc
March 1, 2017

1. What is the formal charge on the N atom in the molecule shown below?

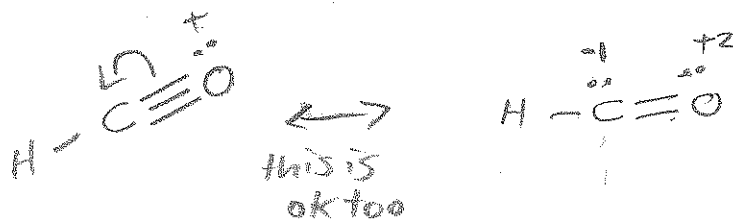


2. Two resonance forms of the same molecule are shown below. Draw arrows to show how the structure on the left would convert to the structure on the right and how the structure on the right would convert to the structure to the left.



- 3a. Draw a resonance structure for the molecule shown below.

- 3b. If your resonance structure has any formal charges, be sure to show them clearly.

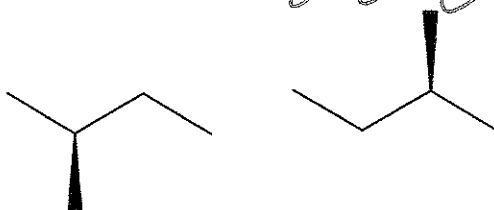


Name _____

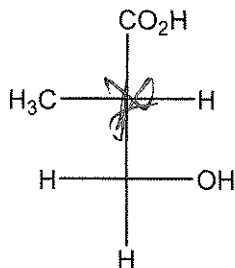
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IIIa
March 29, 2017

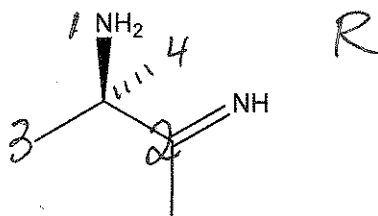
1. What is the relationship between the following two molecules? Are they identical, enantiomers, diastereomers or constitutional isomers?



2. Label all chiral centers in the molecule shown below.



3. Determine the R/S configuration of the chiral center shown below. Make sure to clearly indicate the priority (1, 2, 3 or 4) of each group attached to the chiral carbon.

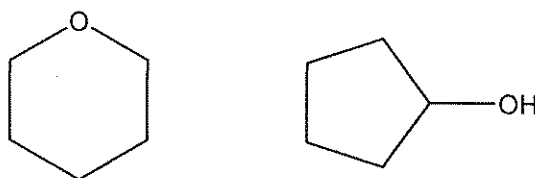


Name _____

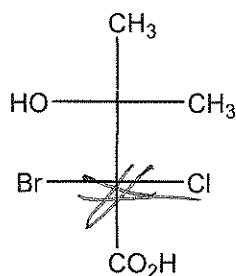
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IIIb
March 29, 2017

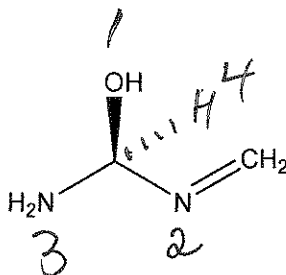
1. What is the relationship between the following two molecules? Are they identical, enantiomers, diastereomers or constitutional isomers?



2. Label all chiral centers in the molecule shown below.



3. Determine the R/S configuration of the chiral center shown below. Make sure to clearly indicate the priority (1, 2, 3 or 4) of each group attached to the chiral carbon.



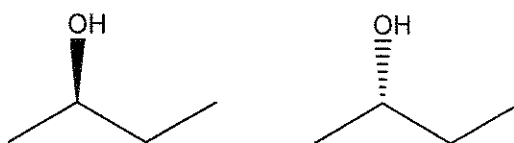
R

Name _____

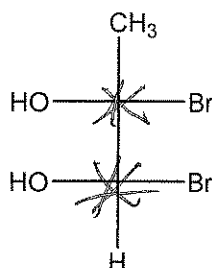
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IIIc
March 29, 2017

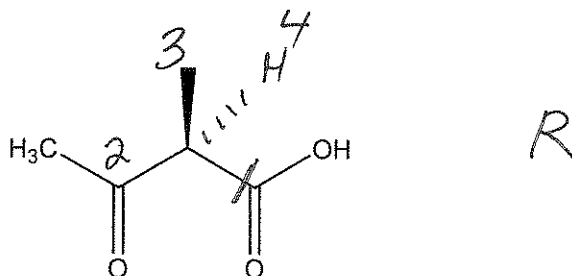
1. What is the relationship between the following two molecules? Are they identical, enantiomers, diastereomers or constitutional isomers?



2. Label all chiral centers in the molecule shown below.



3. Determine the R/S configuration of the chiral center shown below. Make sure to clearly indicate the priority (1, 2, 3 or 4) of each group attached to the chiral carbon.

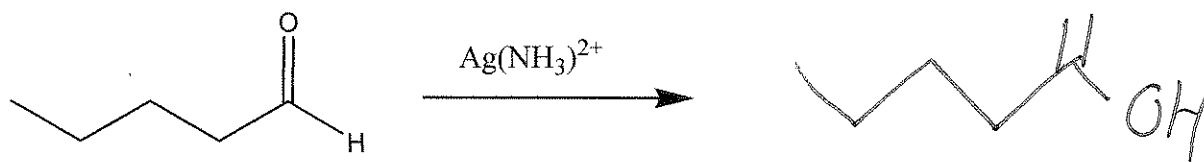


Name _____

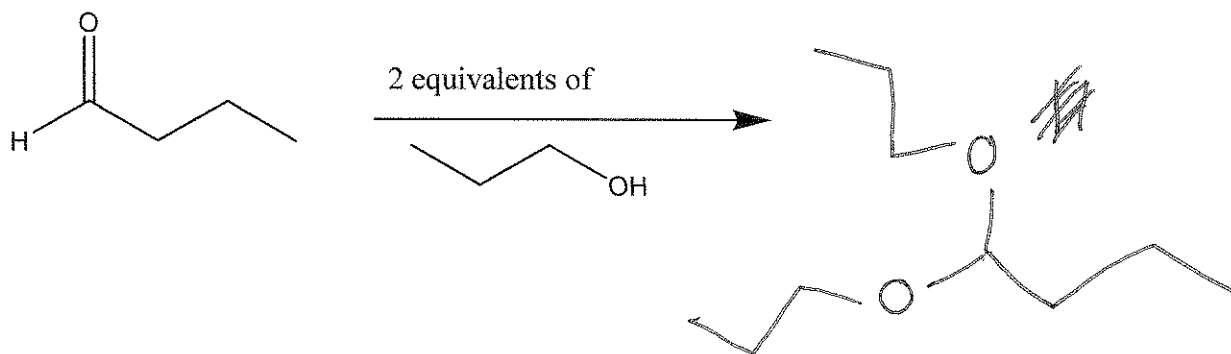
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IVa
April 5, 2017

1. Give the product of the following reaction:

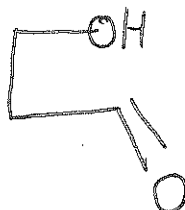
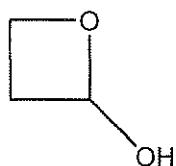


2. Give the product of the following reaction:



3a. Which functional group (acetal or hemiacetal) is shown in the molecule below?

3b. Draw the structures of the aldehyde and alcohol(s) that were used to synthesize this compound:

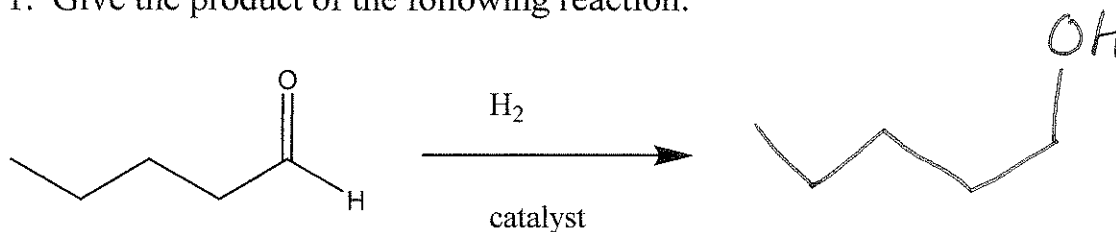


Name _____

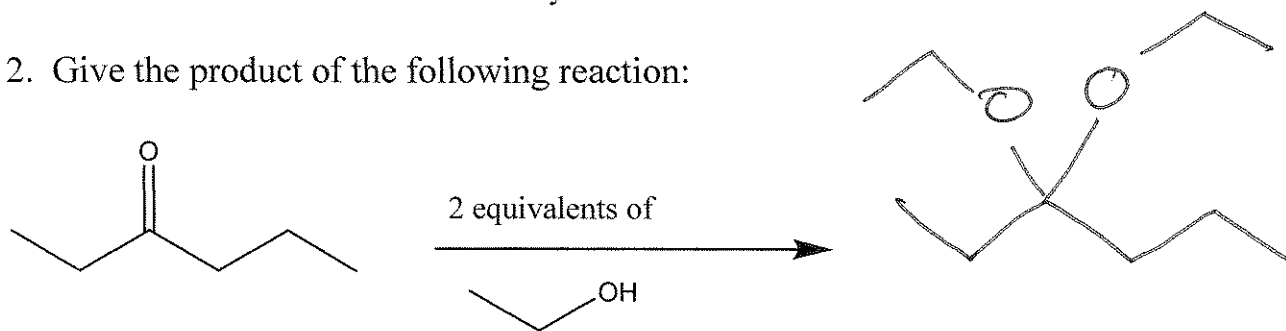
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IVb
April 5, 2017

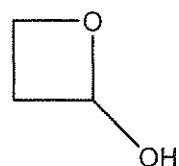
1. Give the product of the following reaction:



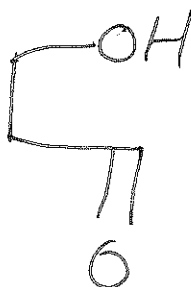
2. Give the product of the following reaction:



3a. Which functional group (acetal or hemiacetal) is shown in the molecule below?



3b. Draw the structures of the aldehyde and alcohol(s) that were used to synthesize this compound:

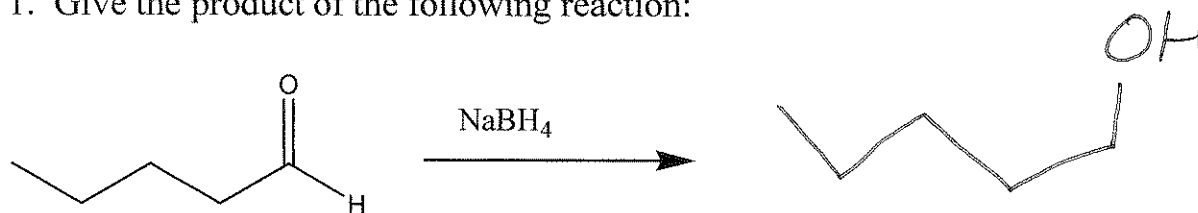


Name _____

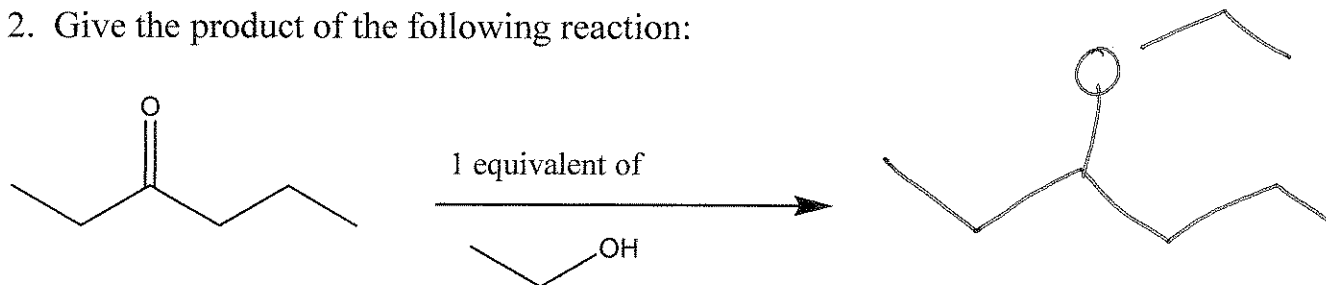
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz IVc
April 5, 2017

1. Give the product of the following reaction:

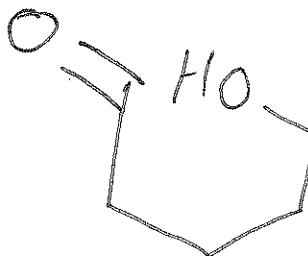
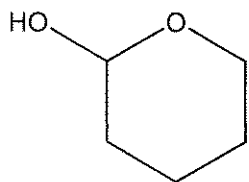


2. Give the product of the following reaction:



3a. Which functional group (acetal or hemiacetal) is shown in the molecule below?

3b. Draw the structures of the aldehyde and alcohol(s) that were used to synthesize this compound:



Name _____

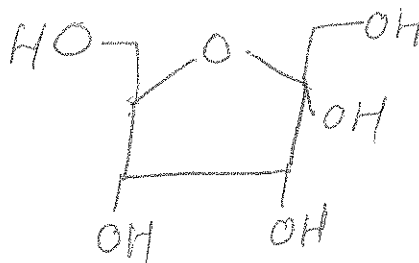
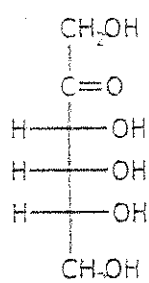
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz Va
May 8, 2017

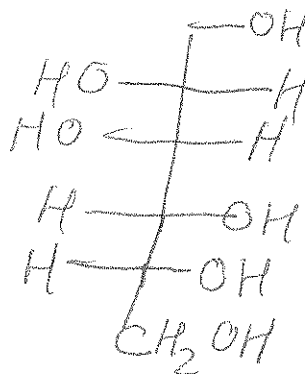
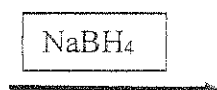
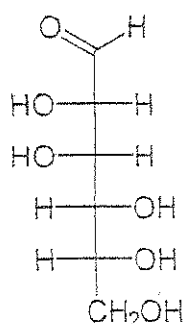
1. Convert the following sugar from the open form to the hemiacetal form.

Draw a 5 membered ring.

Draw the anomeric carbon with the OH group α (alpha).



2. Give the product of the following reaction:



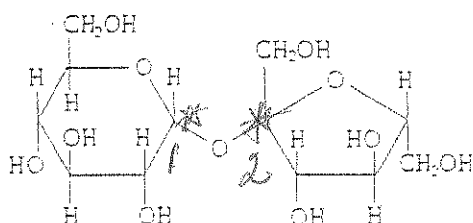
3. Analyze the following disaccharide:

a. Label the anomeric carbons with stars.

b. Which two carbons (give their numbers) link the two sugars together?

c. Is this compound a reducing sugar? In other words, does it undergo oxidation with Benedict's or Tollens' reagent?

no

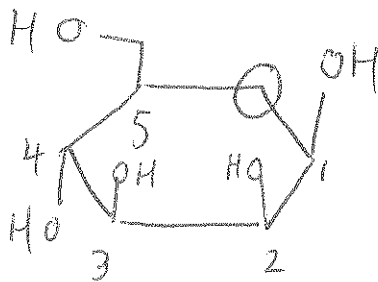
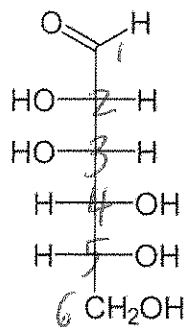


Name _____

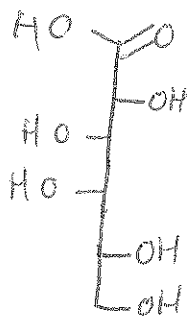
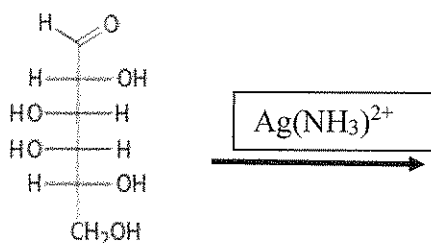
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz Vb
May 8, 2017

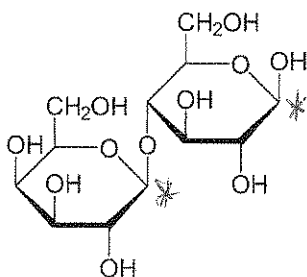
- Convert the following sugar from the open form to the hemiacetal form.
Draw a 6 membered ring.
Draw the anomeric carbon with the OH group β (beta).



- Give the product of the following reaction:



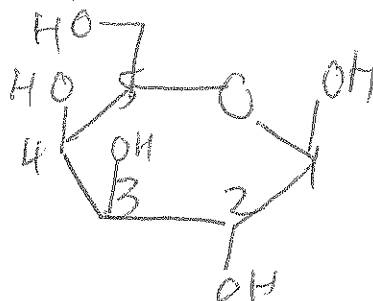
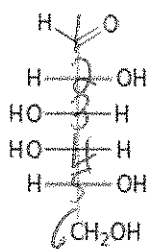
- Analyze the following disaccharide:
 - Label the anomeric carbons with stars.
 - Is the linkage between the two sugars an alpha or beta linkage? β
 - Is this compound a reducing sugar? In other words does it undergo oxidation with Benedicts' or Tollens' reagent? *yes*



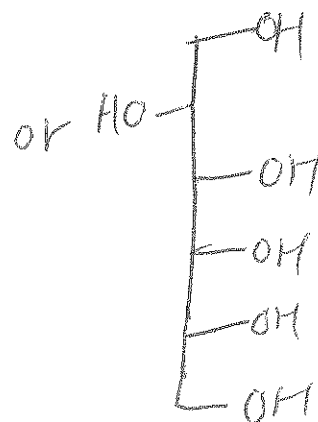
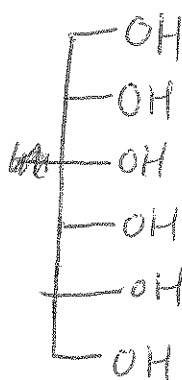
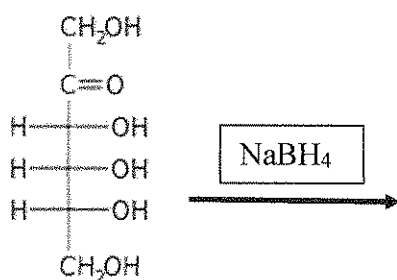
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz Vc
May 8, 2017

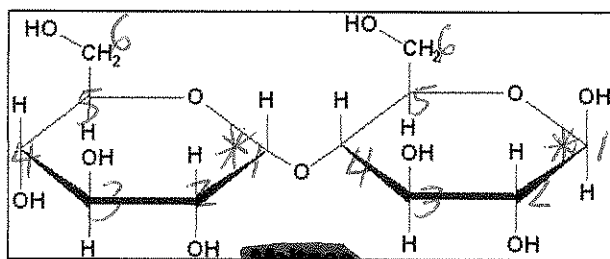
1. Convert the following sugar from the open form to the hemiacetal form.
Draw a 6 membered ring.
Draw the anomeric carbon with the OH group β (beta).



2. Give the product of the following reaction:



3. Analyze the following disaccharide:
- Label the anomeric carbons with stars.
 - Which two carbons (give their numbers) link the two sugars?
 - Is this compound a reducing sugar? In other words does it undergo oxidation with Benedicts' or Tollens' reagent?



1, 4

yes

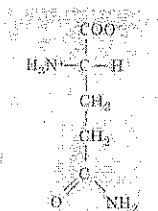
key

Name _____

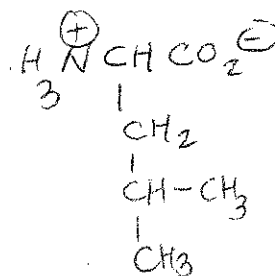
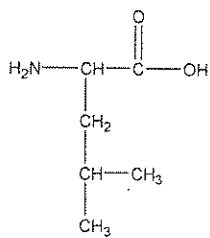
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz 6a
May 15, 2017

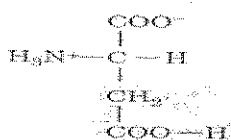
1. Does the following amino acid contain an acidic, basic, polar or nonpolar side chain?



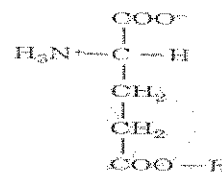
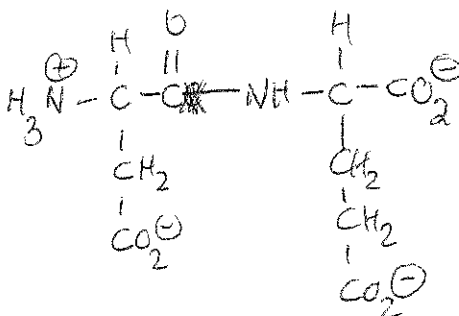
2. Draw the zwitterion form of the following amino acid:



3. Construct a dipeptide Asp Glu from the amino acids shown below. Make sure to draw the dipeptide in the form it would take in your body (at physiological pH):

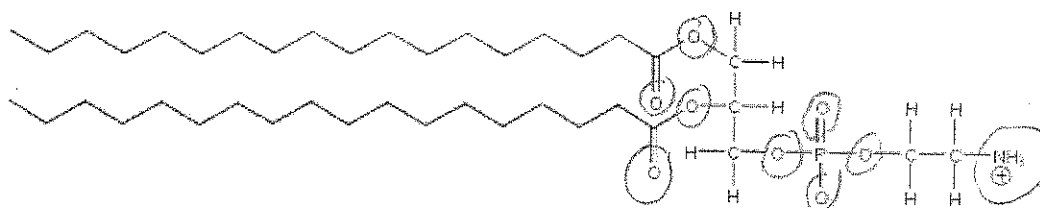


Aspartic acid (Asp, D)



Glutamic acid (Glu, D)

4. Below is a lipid found in a cell membrane. CAREFULLY circle the parts of the lipid that participate in hydrogen bonding.



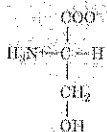
Name _____

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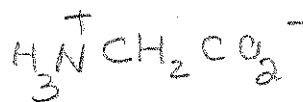
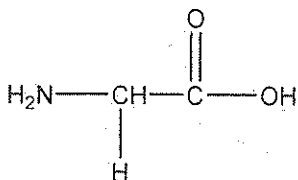
key

Quiz 6b
May 15, 2017

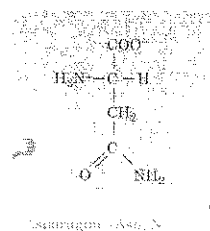
1. Does the following amino acid contain an acidic, basic, polar or nonpolar side chain?



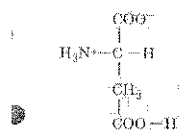
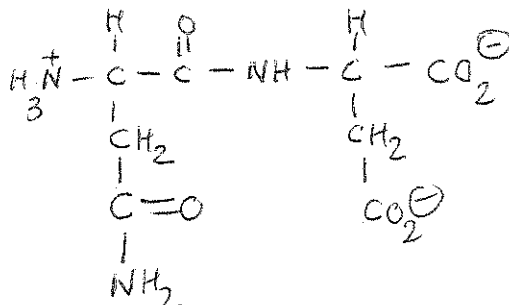
2. Draw the zwitterion form of the following amino acid:



3. Construct a dipeptide Asn Asp from the amino acids shown below. Make sure to draw the dipeptide in the form it would take in your body (at physiological pH):

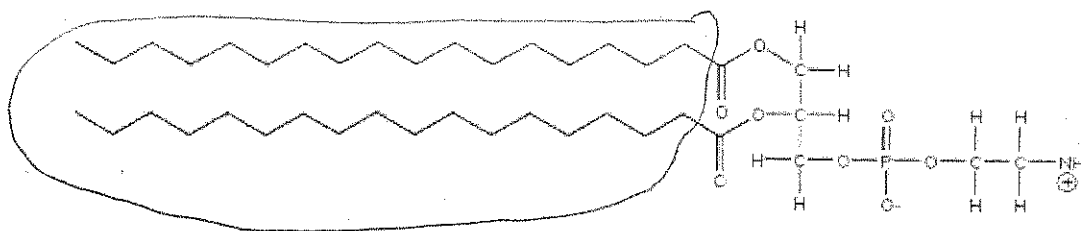


Asn



Asp

4. Below is a lipid found in a cell membrane. CAREFULLY circle the parts of the lipid that are nonpolar.



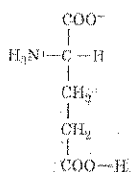
key

Name _____

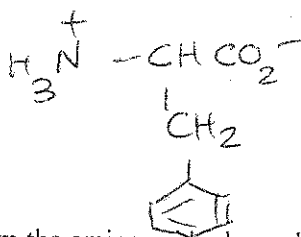
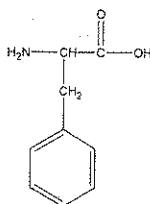
Lab Instructor Belyayeva Chiemezie Yildirim Khajo Mollica

Quiz 6
May 15, 2017

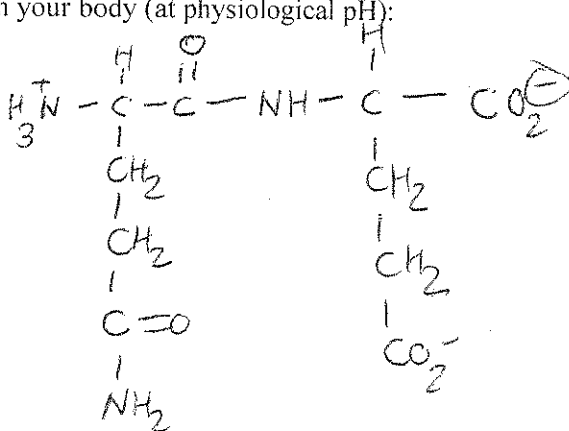
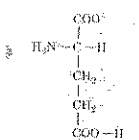
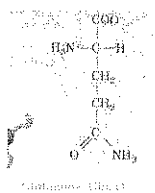
1. Does the following amino acid contain an acidic, basic, polar or nonpolar side chain?



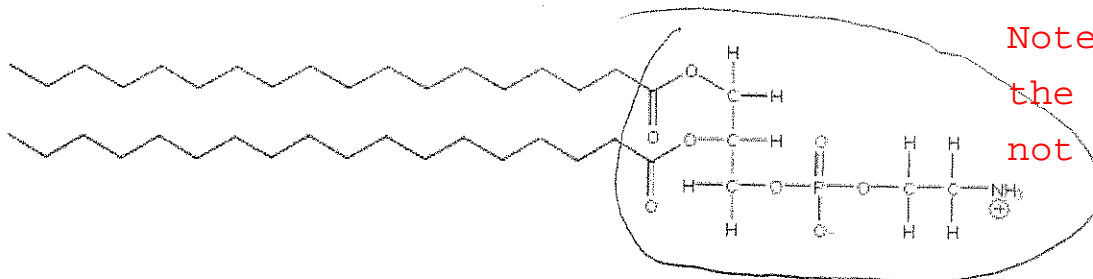
2. Draw the zwitterion form of the following amino acid:



3. Construct a dipeptide Gln Glu from the amino acids shown below. Make sure to draw the dipeptide in the form it would take in your body (at physiological pH):



4. Below is a lipid found in a cell membrane. CAREFULLY circle the parts of the lipid that are polar.



Note: The H's on the CH₂ groups are not polar.