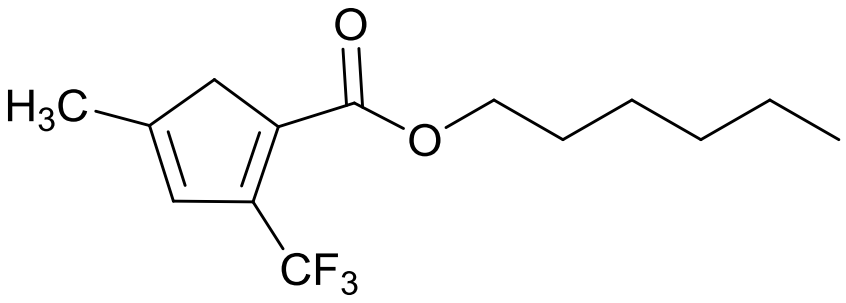
2012 Mechanisms Quiz #1 20 points NAME:_____

1-8) For the following compound, determine the number of:



1) carbon atoms

2) hydrogen atoms

3) π bonds

4) fluorine atoms + oxygen atoms

5) sp^2 hybridized carbons

6) sp hybridized atoms

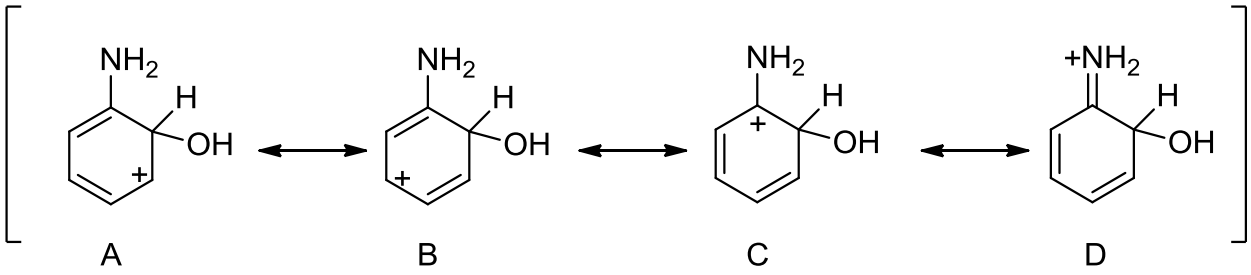
7) sp^3 hybridized carbons

8) lone pairs (non bonding pairs) of electrons

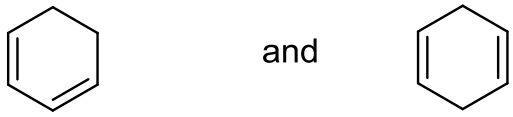
9) Is the above ring AROMATIC, or ANTI-AROMATIC, or NON-AROMATIC ?

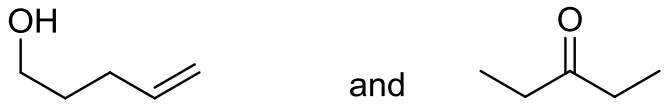
10) What is the name of the above oxygen containing functional group ?

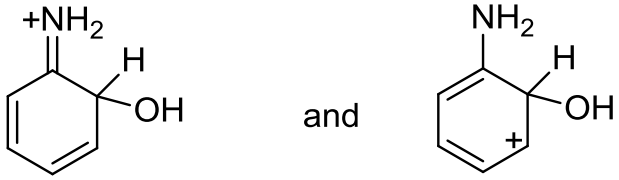
11-13) Draw in the curly arrows that convert A into B into C into D.



14-17) Indicate for the following pairs of compounds the most accurate description as either ISOMERS or TAUTOMERS or ENANTIOMERS or RESONANCE STRUCTURES.







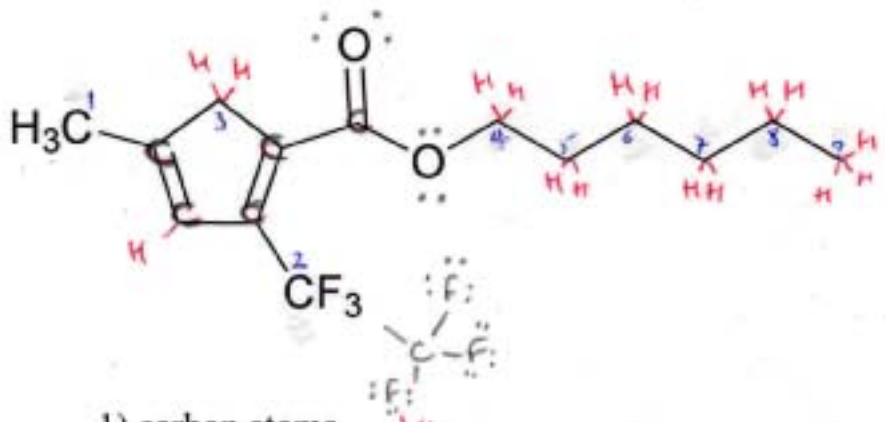
18-20) Indicate which member of the following pairs is more stable.

BONUS QUESTION up to 2 points.

Briefly explain the difference between THERMODYNAMICS and KINETICS.

2012 Mechanisms Quiz #1 **20 points** NAME:_____

1-8) For the following compound, determine the number of:



1) carbon atoms 14

2) hydrogen atoms 19

3) π bonds 3

4) fluorine atoms + oxygen atoms 3+2= 5

5) sp^2 hybridized carbons 5

6) sp hybridized atoms 0

7) sp^3 hybridized carbons 9

8) lone pairs (non bonding pairs) of electrons 13

9) Is the above ring AROMATIC, or ANTI-AROMATIC, or NON-AROMATIC ?

10) What is the name of the above oxygen containing functional group ?

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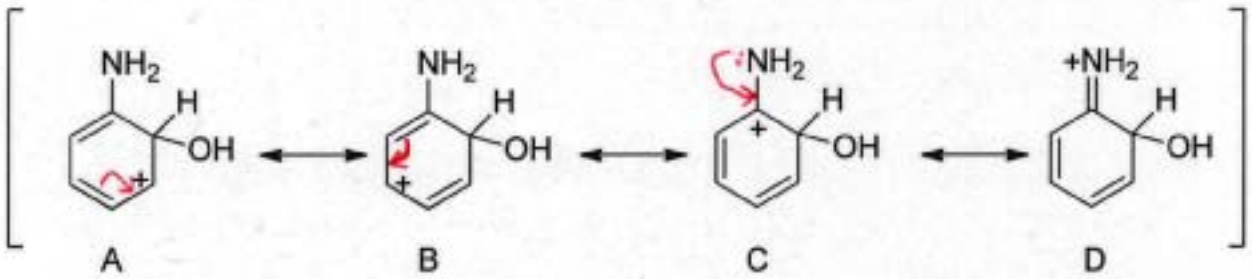
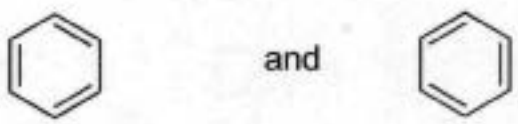
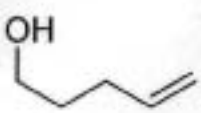
11-13) Draw in the curly arrows that convert A into B into C into D.

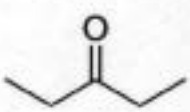


14-17) Indicate for the following pairs of compounds the most accurate description as either ISOMERS or TAUTOMERS or ENANTIOMERS or RESONANCE STRUCTURES.

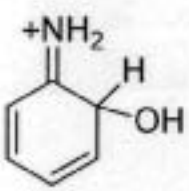
 and Resonance

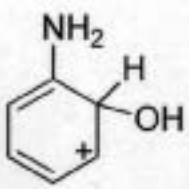
 and  Isomers



and 

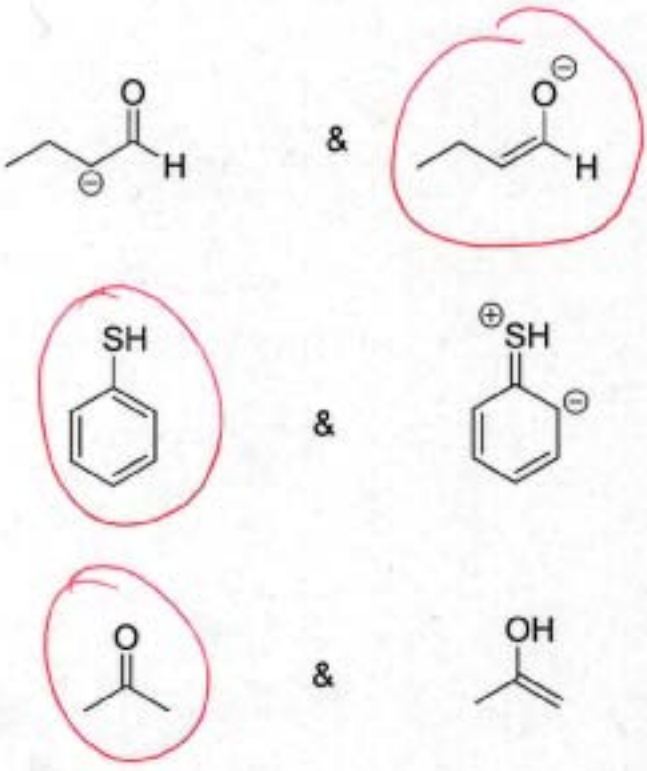
Isomers



and 

Resonance

18-20) Indicate which member of the following pairs is more stable.



BONUS QUESTION up to 2 points.

Briefly explain the difference between THERMODYNAMICS and KINETICS.

Thermodynamics deals with energy changes and the position of equilibrium, expressed using equilibrium constant K.

Kinetics deals with rates of reaction, expressed using rate constants, k.