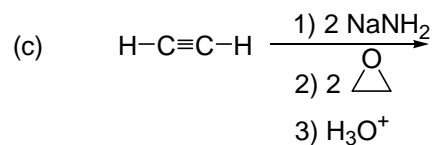
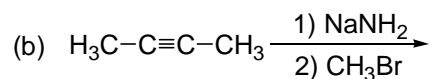
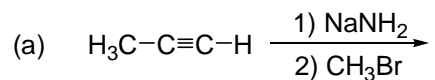


Exam 3. Chapters 9-13**100points**

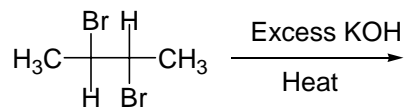
Name _____

Answer all the questions.

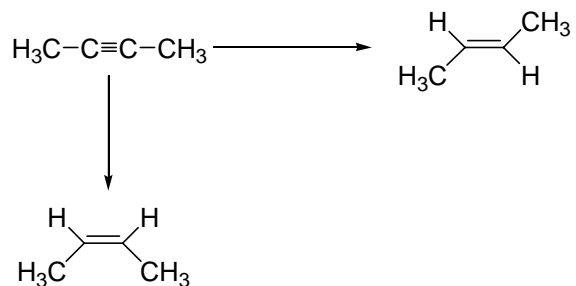
1) Give the products (if any !!) formed in the following reactions:
(10 pts)



2) Draw curly arrows to show the mechanism of the following elimination reaction, and draw the final product. (Hint: the product only shows a single ^1H NMR resonance).
(10pts)

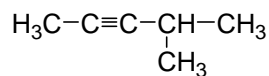
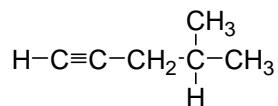


3) Give reagents to do each of the following transformations.
(6pts)



3b) Label the two products as either E or Z.
(2pts)

4) Name (in IUPAC form) the following two compounds.
(6pts)

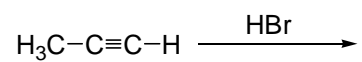


4b) Outline a simple chemical test which would allow you to distinguish between these two isomers.
(4pts)

4c) How many different signals would each isomer give in a ^1H NMR spectrum?
(6pts)

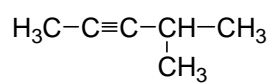
5) The addition of one equivalent of HBr to the following alkyne gives only one product (regio-isomer). Write the mechanism of this addition reaction, and explain why only one product is observed.

(10pts)

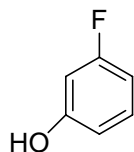
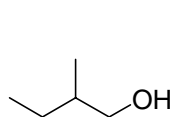


6) For the following alkyne, identify the hybridization of every carbon atom.

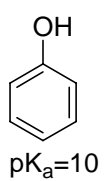
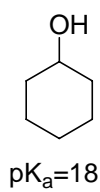
(6pts)



7) Name (in IUPAC form) the following molecules:
(8pts)

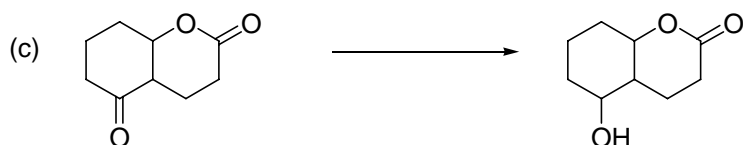
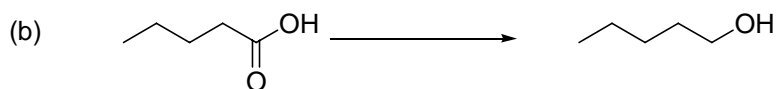
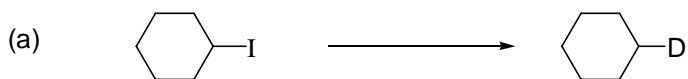


8) Explain why phenol is 10^8 times **more acidic** than cyclohexanol.

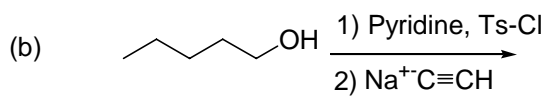
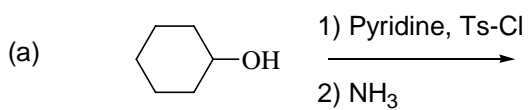


(12pts)

9) Give reagents for the following transformations.
(12pts)



10) Draw the products of following transformations.
(8pts)



Exam 3. Chapters 9-13

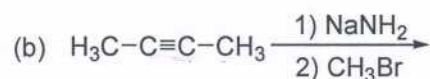
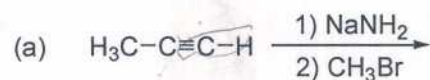
100points

Name _____

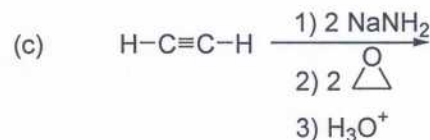
Simon Tupid

Answer all the questions.

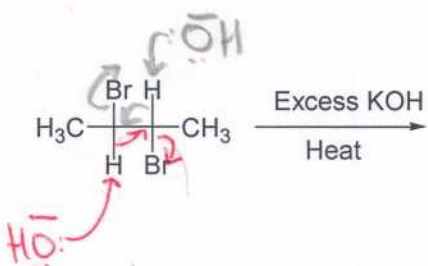
1) Give the products (if any !!) formed in the following reactions:
(10 pts)



No Reaction

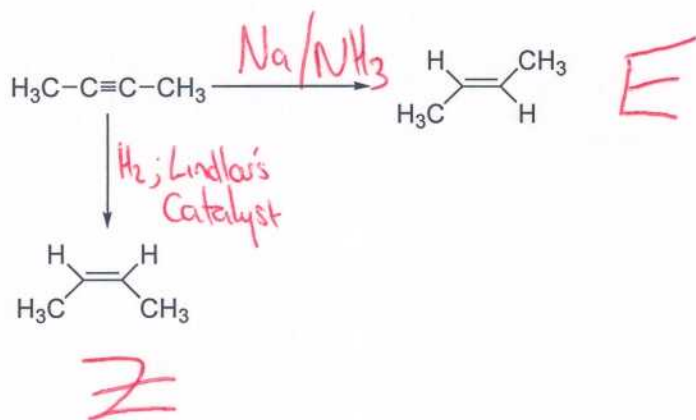


2) Draw curly arrows to show the mechanism of the following elimination reaction, and draw the final product. (Hint: the product only shows a single ^1H NMR resonance).
(10pts)



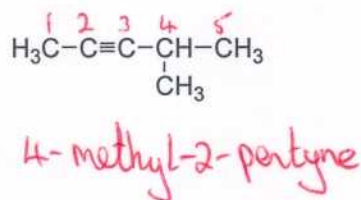
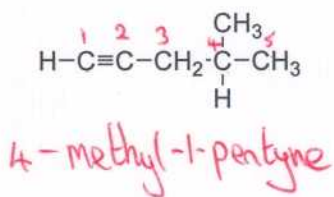
↑
single ^1H NMR resonance

3) Give reagents to do each of the following transformations.
(6pts)



3b) Label the two products as either E or Z.
(2pts)

4) Name (in IUPAC form) the following two compounds.
(6pts)

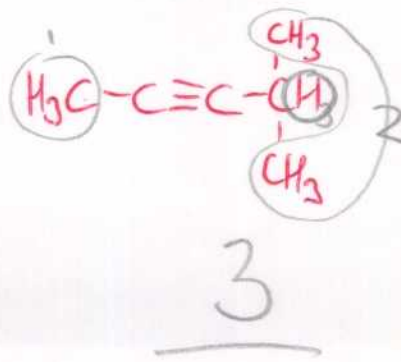
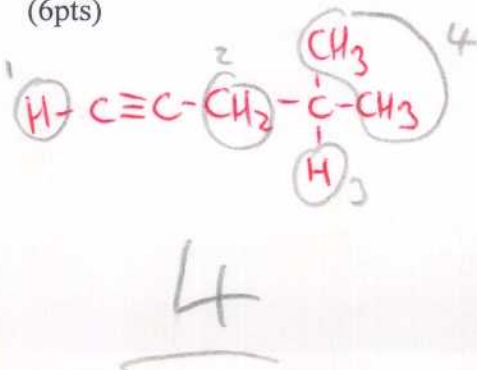


4b) Outline a simple chemical test which would allow you to distinguish between these two isomers.

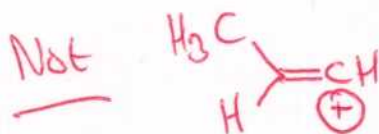
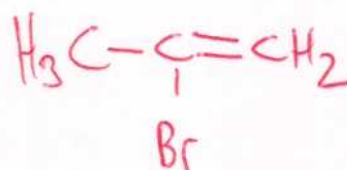
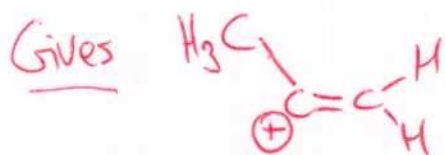
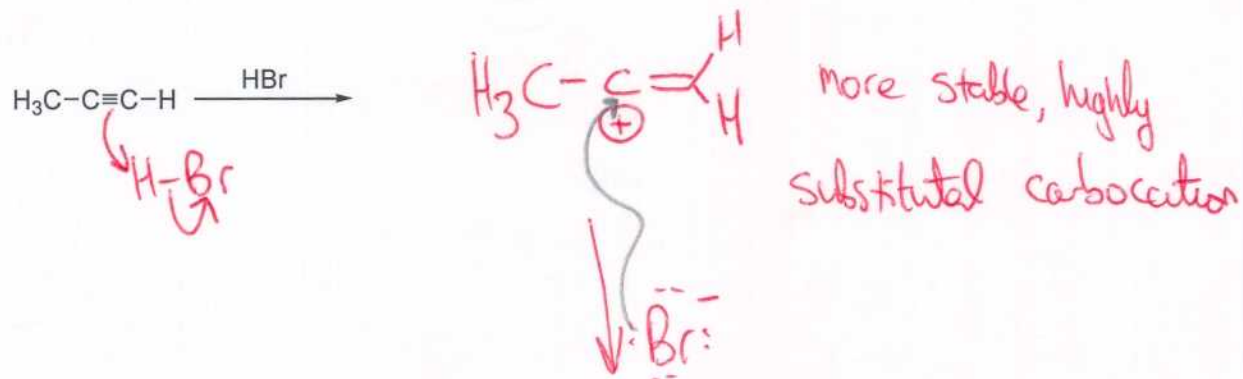
(4pts)

Add a silver(I) (or Copper(I)) salt & look for a precipitate from the terminal alkyne.

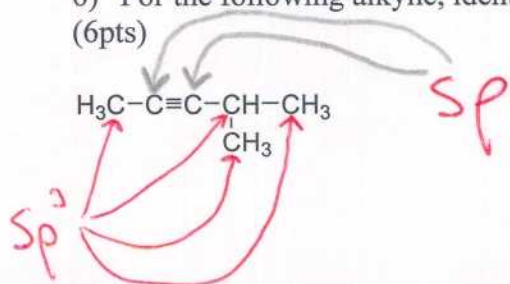
4c) How many different signals would each isomer give in a ^1H NMR spectrum?
(6pts)



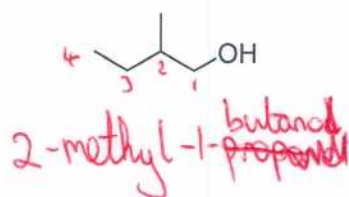
- 5) The addition of one equivalent of HBr to the following alkyne gives only one product (regio-isomer). Write the mechanism of this addition reaction, and explain why only one product is observed.
(10pts)



- 6) For the following alkyne, identify the hybridization of every carbon atom.
(6pts)

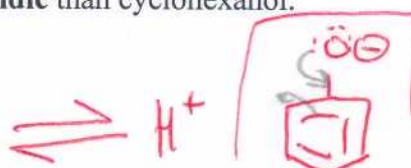
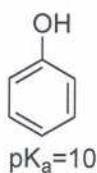
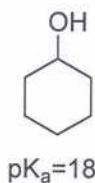


7) Name (in IUPAC form) the following molecules:
(8pts)

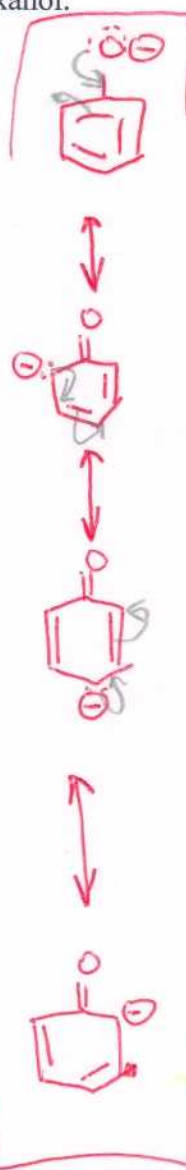


8) Explain why phenol is 10^8 times **more acidic** than cyclohexanol.

(12pts)



No resonance forms



Resonance

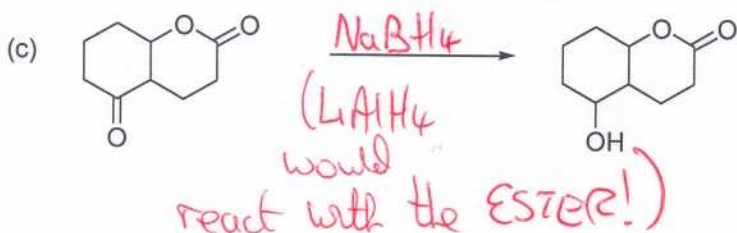
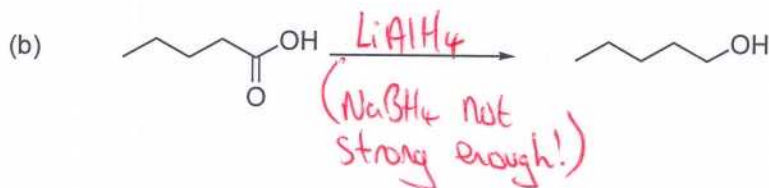
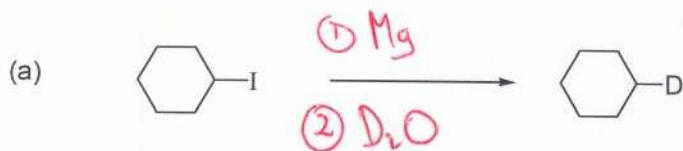
Stabilized

Anion

\therefore More stable &

\therefore stronger acid -

9) Give reagents for the following transformations.
(12pts)



10) Draw the products of following transformations.
(8pts)

