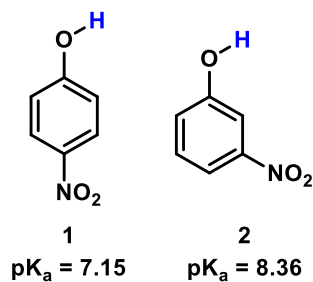
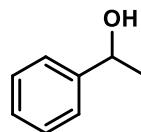
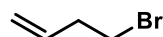
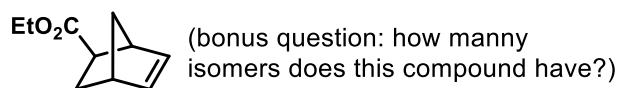
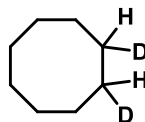
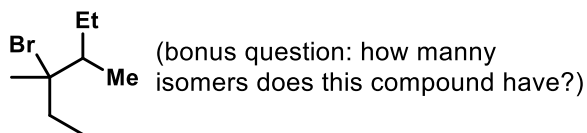
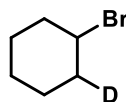
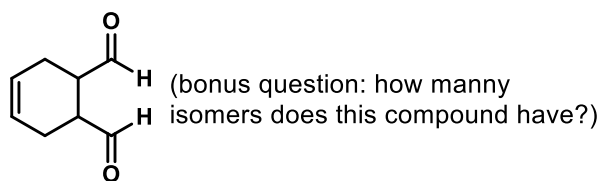


Homework 3 – 2017/04/11

1) 4-nitrophenol (**1**) has a pK_a of 7.15, while 3-nitrophenol (**2**) is slightly less acidic with a pK_a of 8.36. Can you think of a way to explain the experimental data?

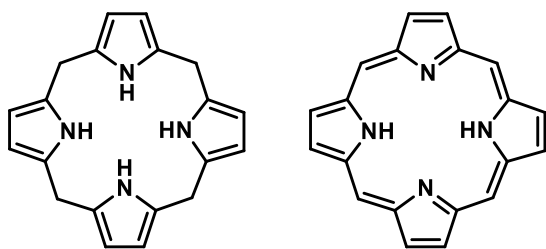
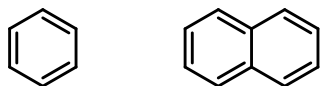
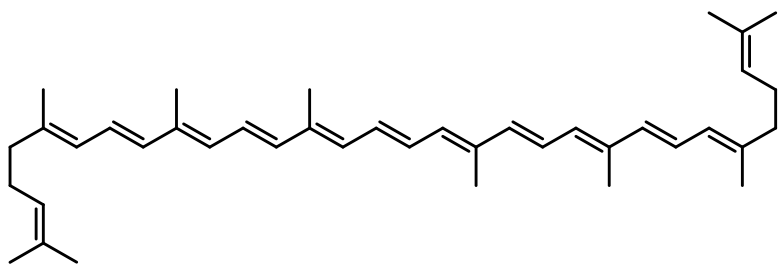
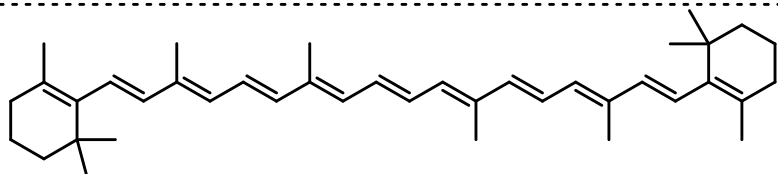
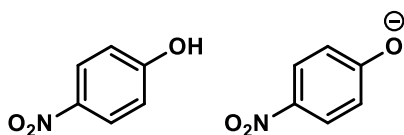
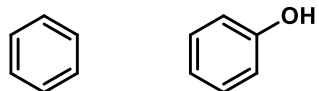
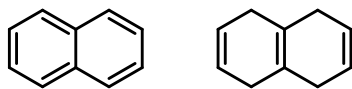


2) Suggest starting materials for the synthesis of the following compounds:

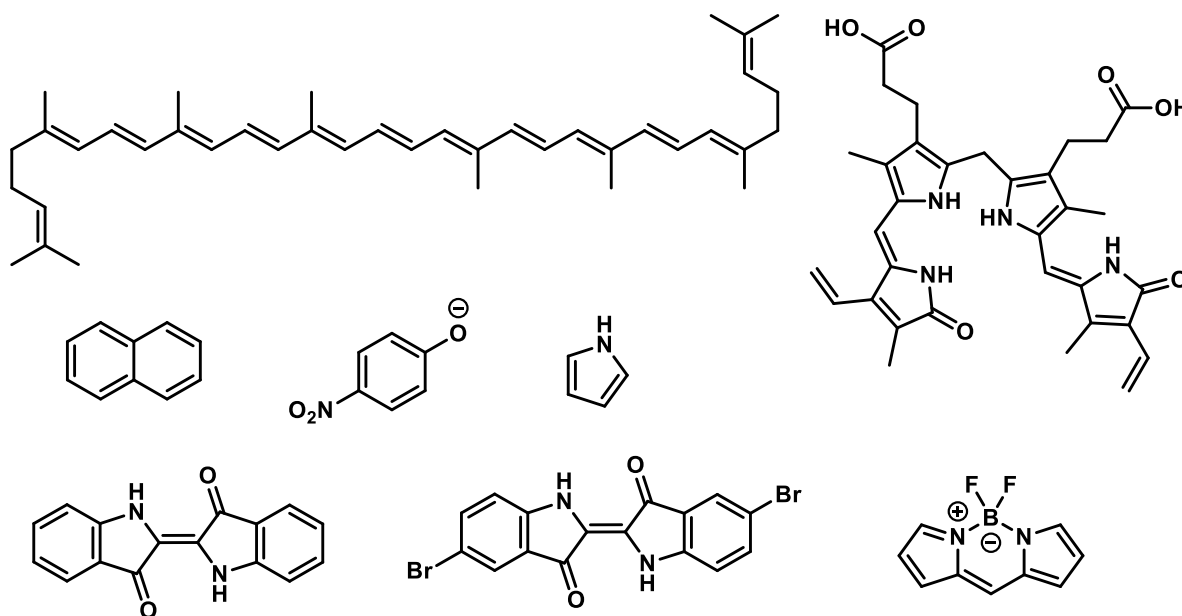


3) Draw the alkene with the smallest molecular weight for which the addition of HBr will result in an *S*-product, while acid-catalyzed H_2O -addition will give the *R*-product.

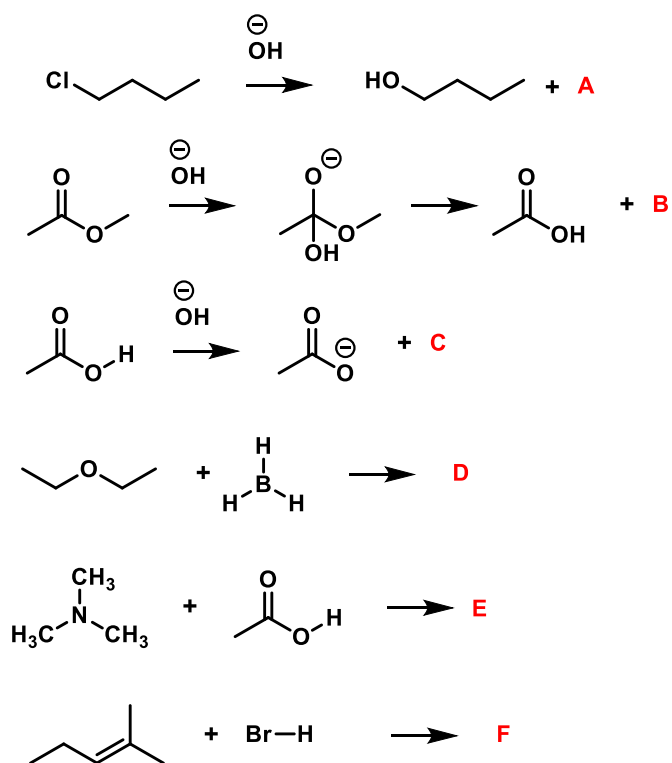
4) Which one of the pairs will have a longer absorption wavelength (λ_{\max})?



4) Which compounds will be blue, purple, yellow, red, or only absorb in the ultraviolet?
(Hint: putting the compounds in increasing λ_{max} order first helps.)



5) Identify the nucleophile, the electrophile, and draw in the curly arrows. What are the structures of the compounds **A** – **F**?



Solutions can be handed in to Daniel Kovacs or to me in person, or you can mail them to eszter.borbas@kemi.uu.se

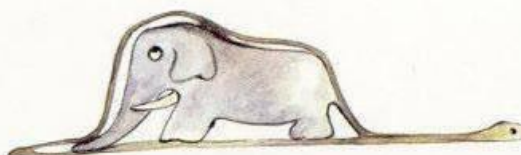
As long as you attempt to answer at least one question you will get feedback.

/Eszter

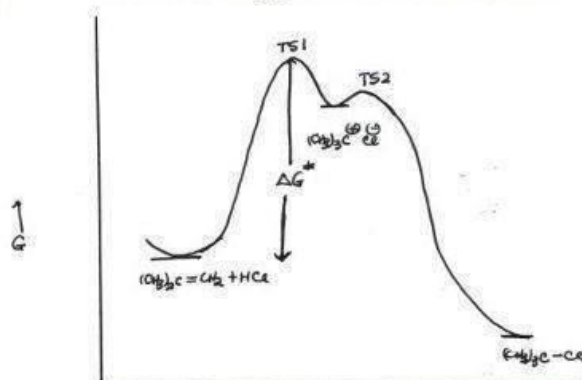
What does this look like to you?



If it looks like a plain hat, you're an adult



If it looks like an elephant being eaten by a
boa constrictor, you're still a child at heart



If it looks like a free-energy
reaction diagram, you're in organic
chemistry and your life is over.