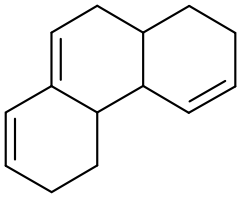
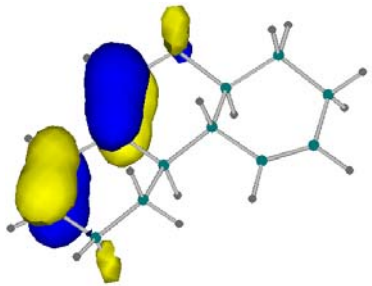
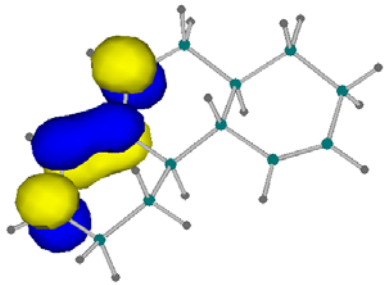
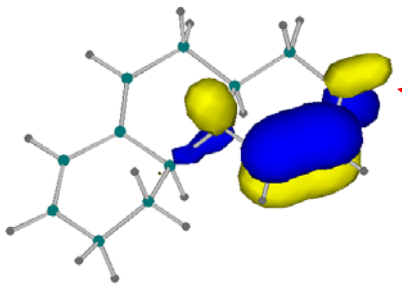
Which is the HOMO of  ?

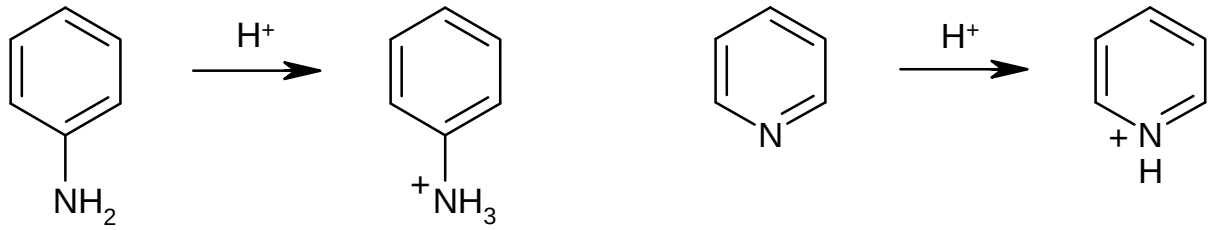
A. 

B. 

C. 

so-called pseudo-π coefficients on CH_2, ignore.

For which of these bases can you use UV-Vis spectroscopy to determine the pK_a?

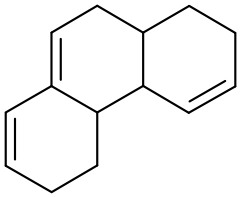


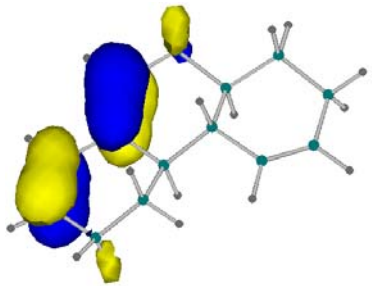
A. For both. Protonation is protonation.

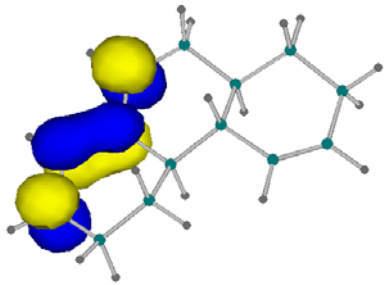
B. For aniline. Conjugation changes upon protonation.

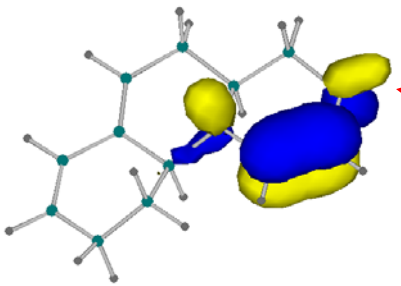
C. For pyridine. Conjugation changes upon protonation.

D. For neither. The bases do not absorb in the UV-Vis region.

Which is the HOMO of  ?

A. 

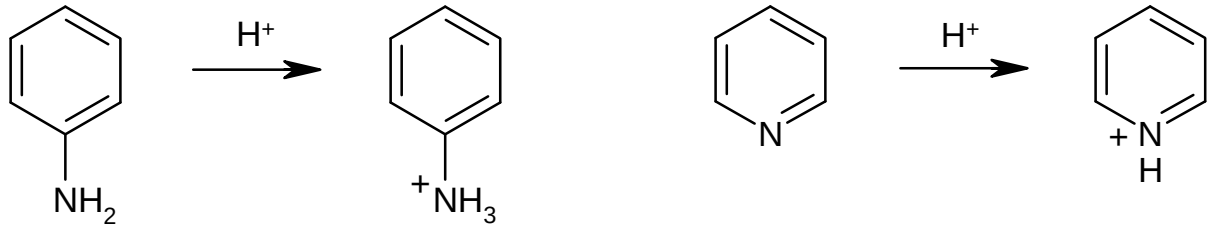
B. 

C. 

A. The diene is more highly conjugated and its HOMO needs one node.

so-called pseudo-π coefficients on CH_2, ignore.

For which of these bases can you use UV-Vis spectroscopy to determine the pK_a?



A. For both. Protonation is protonation.

B. For aniline. Conjugation changes upon protonation.

C. For pyridine. Conjugation changes upon protonation.

D. For neither. The bases do not absorb in the UV-Vis region.

B. The pyridine lone pair is σ-type, perpendicular to the π-system.
Its π-system is not affected.