

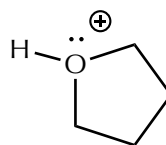
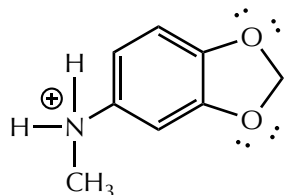
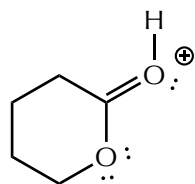
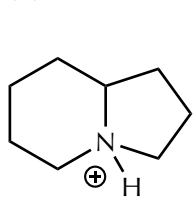
Problem of the Day 11

Section 3.4

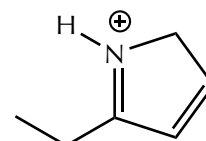
Questions 3.16 (a), (b), and (c)

You estimated the pKa values for the most acidic protons in these 12 compounds. Deprotonate the ones that are cations and now estimate the pKa values for the most acidic protons remaining in each of those cases.

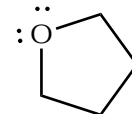
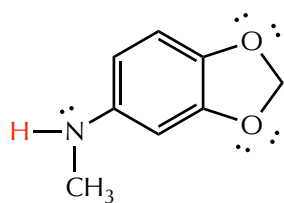
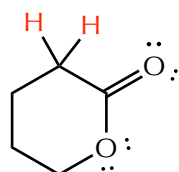
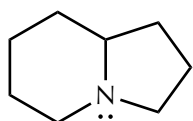
(a)



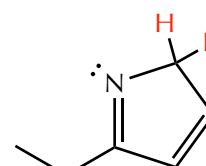
(c)



(a)



(c)



deprotonate

all  $sp^3$  CH  
with no  
significant  
differences  
 $pK_a \sim 49$

CH bonded  
to C of  
C=O  
 $pK_a \sim 19$

$sp^2$  NH  
on a ring;  
no good  
reference  
est. based  
on  $<36$  ( $sp^3$  NH)  
and  $>15$   
( $sp^2$  on C=O)

all  $sp^3$  CH  
with no  
significant  
differences  
 $pK_a \sim 49$

$sp^3$  CH with  
multiple  
resonance sites  
and eN in  
conjugate base;  
no good reference  
est. based on  $<49$   
( $sp^3$  CH)  
and  $>9.2$   
( $sp^3$  CH with  
multiple C=O)