# Org. I Quiz (assignments)

Solomons Chap. 1

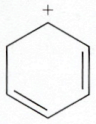
1.5abcd

***Review Problem 1.5*** Write the contributing resonance structures and resonance hybrid for each of the following:

**(a)** $CH_3CH{=}CH{-}CH{=}\overset{+}{\underset{\cdot\cdot}{O}}H$

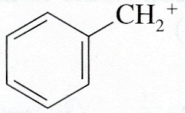
**(b)** $CH_2{=}CH{-}\overset{+}{C}H{-}CH{=}CH_2$

**(c)**

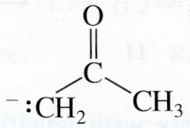


**(d)** $CH_2{=}CH{-}Br$

**(e)**



**(f)**



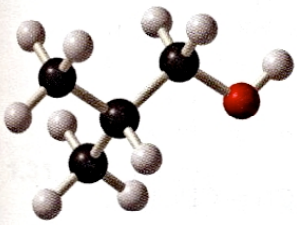
**(g)** $CH_3{-}S{-}CH_2^+$

**(h)** $CH_3{-}NO_2$

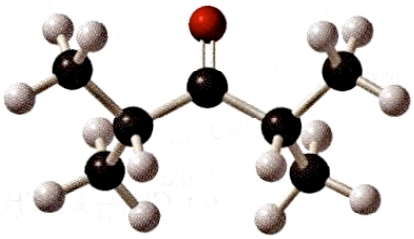
hap1

1.19

**1.19** Write a condensed structural formula for each compound given here.



**(a)**



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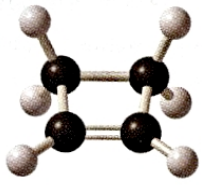
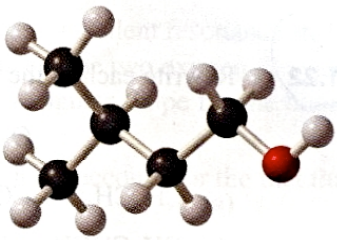


**(c)**

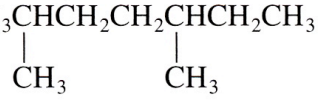


**(d)**

**1.22** Rewrite each of the following using bond-line formulas:

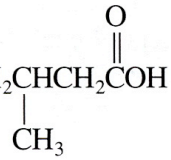
**(a)**

**(b)**



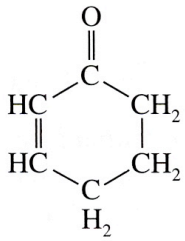
**(c)** $(CH_3)_3CCH_2CH_2CH_2OH$

**(d)**



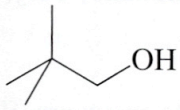
**(e)** $CH_2{=}CHCH_2CH_2CH{=}CHCH_3$

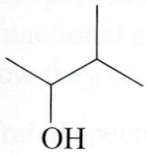
**(f)**

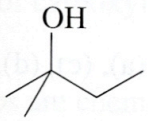


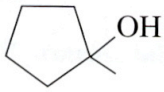
Solomons Chap2

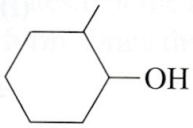
**2.25** Classify the following alcohols as primary, secondary, or tertiary:

**(a)** 

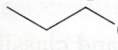

**(b)** 

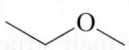

**(c)** 

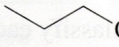

**(d)** 

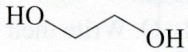

**(e)** 

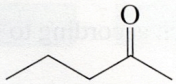

**2.28** Which compound in each of the following pairs would have the higher boiling point? Explain your answers.

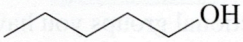
**(a)** 

or 

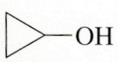

**(b)** 

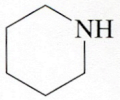
or 

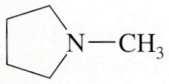

**(c)** 

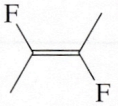
or 

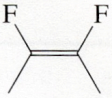

**(d)** 

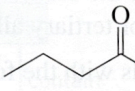
or 

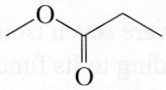

**(e)** 

or 


**(f)** 

or 


**(g)** 

or 


**(h)** Hexane, $CH_3(CH_2)_4CH_3$, or nonane, $CH_3(CH_2)_7CH_3$

**(i)** 
or 

Solomons Chap3

**3.28** Arrange the following compounds in order of decreasing acidity:

**(a)** $CH_3CH{=}CH_2$, $CH_3CH_2CH_3$, $CH_3C{\equiv}CH$

**(b)** $CH_3CH_2CH_2OH$, $CH_3CH_2CO_2H$, $CH_3CHClCO_2H$

**(c)** $CH_3CH_2OH$, $CH_3CH_2OH_2^+$, $CH_3OCH_3$

**3.29** Arrange the following in order of increasing basicity:

**(a)** $CH_3NH_2$, $CH_3NH_3^+$, $CH_3NH^-$

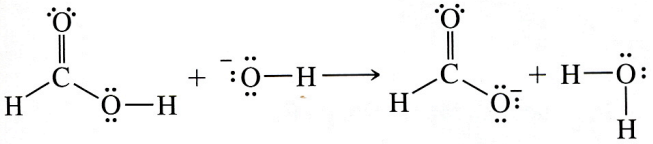
**(b)** $CH_3O^-$, $CH_3NH^-$, $CH_3CH_2^-$

**(c)** $CH_3CH{=}CH^-$, $CH_3CH_2CH_2^-$, $CH_3C{\equiv}C^-$

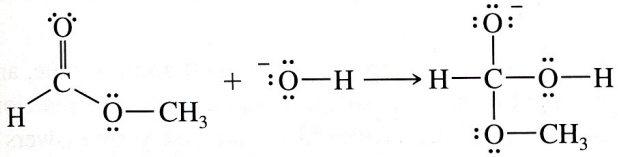
**3.30** Whereas $H_3PO_4$ is a triprotic acid, $H_3PO_3$ is a diprotic acid. Draw structures for these two acids that account for this difference in behavior.

**3.31** Supply the curved arrows necessary for the following reactions:

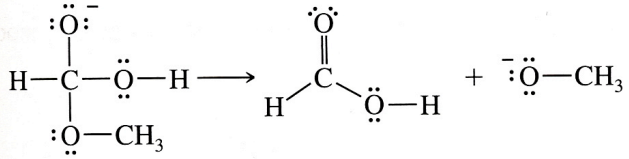
**(a)**



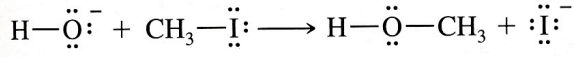
**(b)**



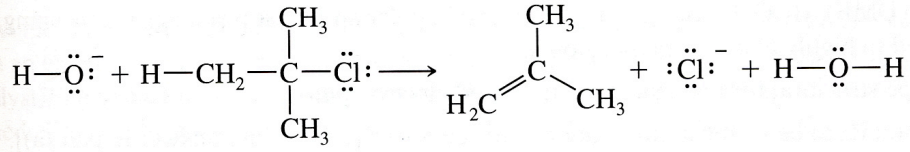
**(c)**



**(d)**



**(e)**



**3.42** Formamide ($HCONH_2$) has a $pK_a$ of approximately 25. Predict, based on the map of electrostatic potential for formamide shown here, which hydrogen atom(s) have this $pK_a$ value. Support your conclusion with arguments having to do with the electronic structure of formamide.