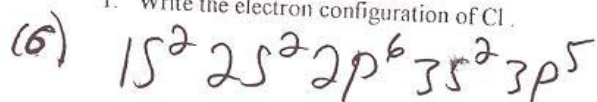


A

Name

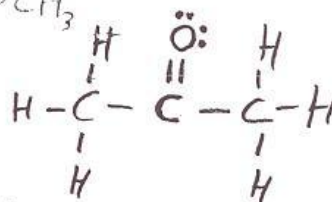
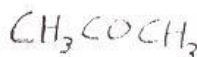
Website
Key (1)

1. Write the electron configuration of Cl.



2. Draw the Lewis structure of

(6)

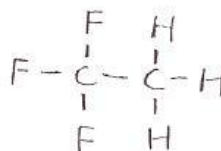
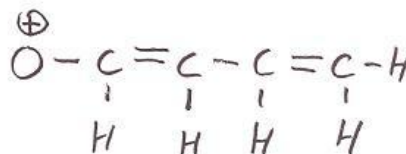
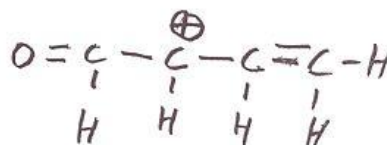
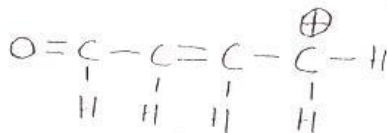


(5) 3. Which contains both ionic and covalent bonds?

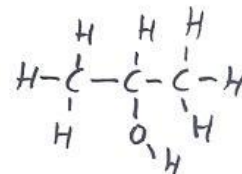
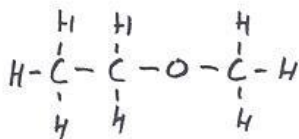
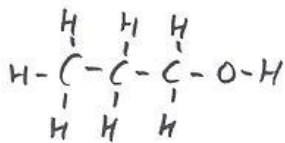
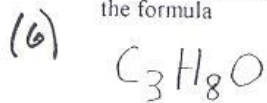


(4) 4. Given the following electronegativities (F = 4.0, C = 2.5, H = 2.2), which bond is the most polar in the following molecule?

(a) C-F b) C-H c) C-C

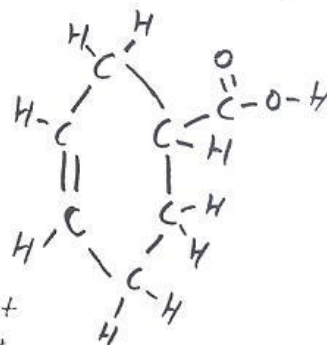
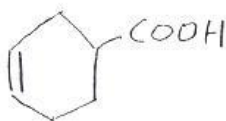
(6) 5. Draw the Two other resonance forms for

6. Draw the structural formula (ex. $\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}-\text{C}-\text{C}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$) for any two of the three compounds having the formula



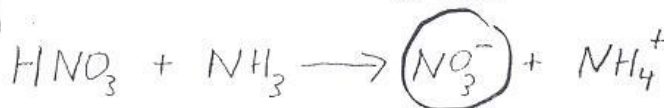
7. Draw the Lewis structure for

(6)



8. In the reaction below, circle the conjugate base.

(4)



9. In the structure to the right, which carbon(s) have:

(8)

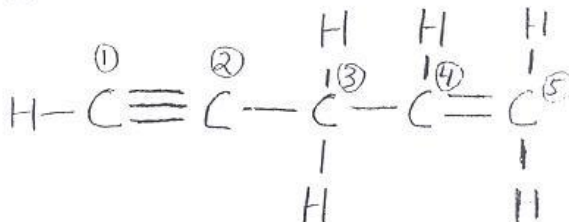
A bond angle of 120 4-5

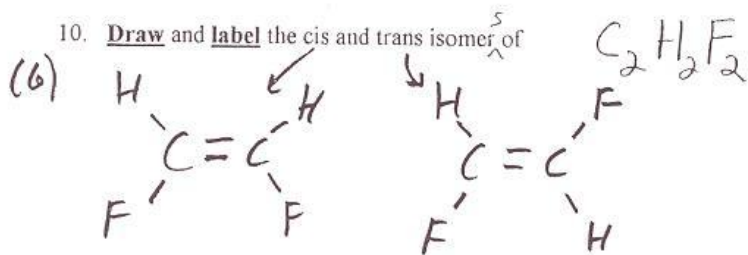
A bond angle of 180 1-2

sp hybridized orbitals 1-2

sp hybridized orbitals 1-2

no pi (π) bonds 3





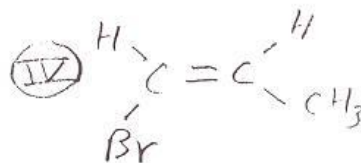
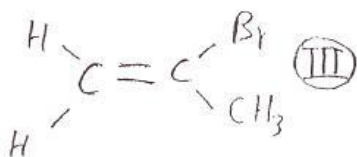
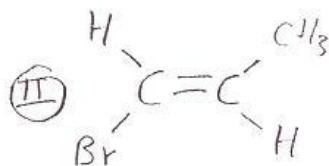
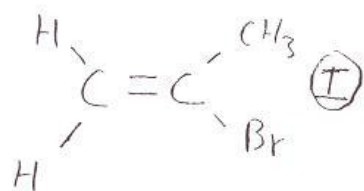
11. Circle any polar molecules below

(5)



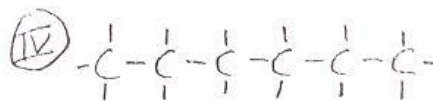
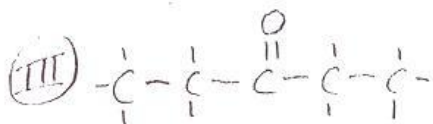
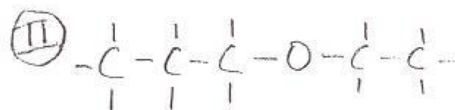
12. Given the structures below, pick a pair that are constitutional isomers (structural) 1-2 / 1-4 / 2-3 / 3-4 cis-trans isomers I + IV the same molecule I + III

(9)



(6) 13. Which of the following: (note: all are about the same size)

- a) is most soluble in water: I
 b) has the lowest boiling point: IV
 c) can hydrogen bond to itself: I



14. Define or give an example of:

(24) valence electrons electrons in outermost shell

nonbonding electrons (valence) electrons that are not used to form bonds

Lewis acid (electrophile) electron pair acceptor

Lewis base (nucleophile) electron pair donor

alkene $C=C$

alcohol ROH

ketone $R-\overset{O}{\parallel}C-R / RCOR$

amine $RNH_2 / R_2NH / R_3N$

alkyne $C\equiv C$

carboxylic acid $RCOOH$

aldehyde $R-\overset{O}{\parallel}C-H / RCHO$

aromatic hydrocarbon

