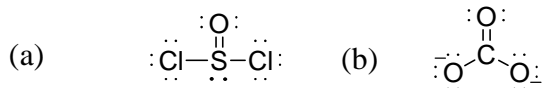
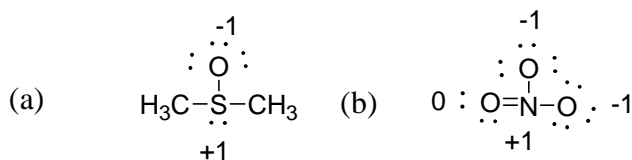


March 01, 2010 (due by March 06, 2010)

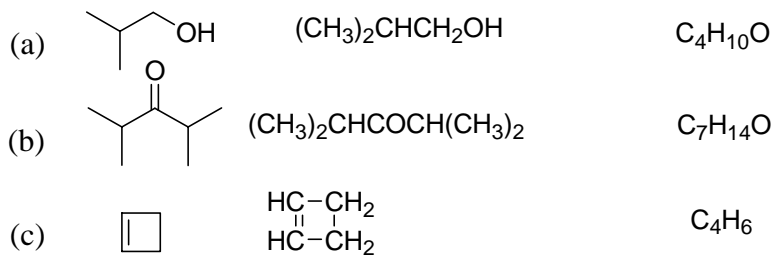
1. Write a Lewis Structure for each of the following:



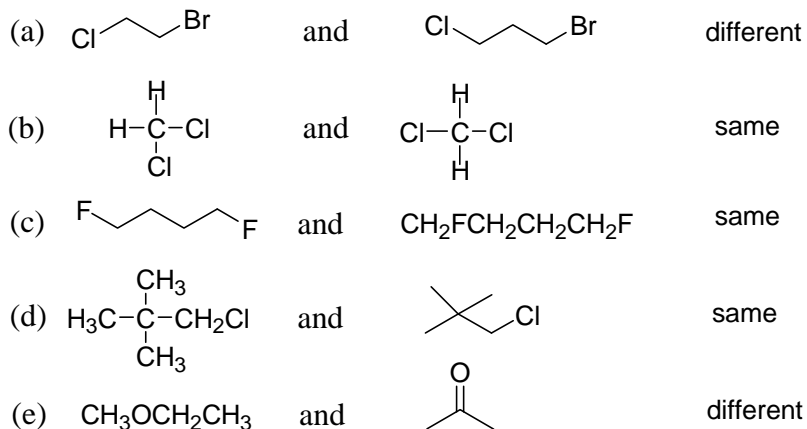
2. Give the formal charge on each atom of the following:



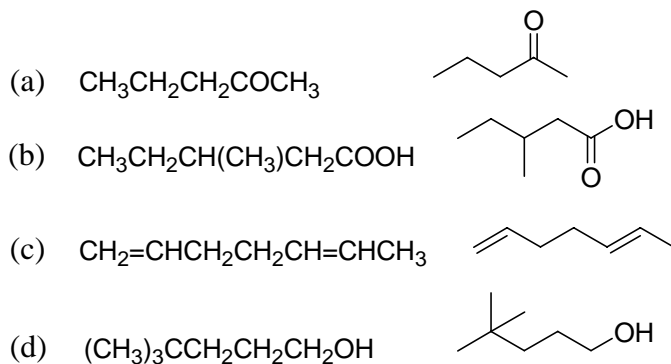
3. Write the molecular formula and the condensed structural formula for each of the following compounds:



4. Consider each pair of structural formulas and state whether the two formulas represent the same compound or whether they represent different compounds:



5. Rewrite each of the following using bond-line formulas:



6. Which one is stronger base: sodium ethoxide ( $\text{NaOCH}_2\text{CH}_3$ ) or sodium amide ( $\text{NaNH}_2$ )? Justify your answer. [ $pK_a$  values for  $\text{CH}_3\text{CH}_2\text{OH}$  and  $\text{NH}_3$  are 16 and 36 respectively]

$\text{NaNH}_2$ ; because the conjugated acid ( $\text{NH}_3$ ) of the strong base ( $\text{NH}_2^-$ ) is a weak acid (higher  $pK_a$  value)

7. Which one is stronger acid:  $\text{CH}_3\text{COOH}$  or  $\text{CF}_3\text{COOH}$ ? Justify your answer.

$\text{CF}_3\text{COOH}$ ; because of the higher electronegativity of F atom. The electron withdrawing F atoms make the conjugated base ( $\text{CF}_3\text{COO}^-$ ) more stable.

8. Complete the following reaction and identify acids and bases and their conjugated acids and bases:

