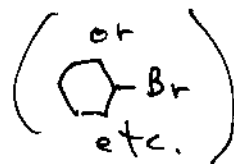
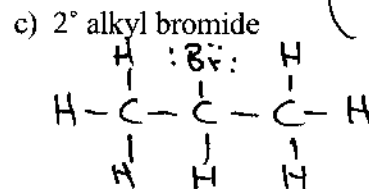
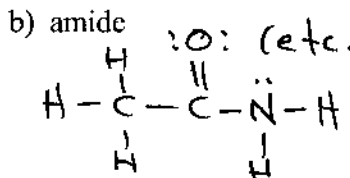
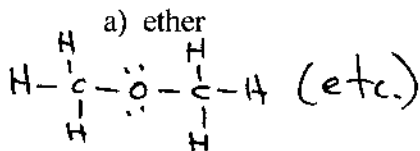
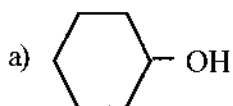


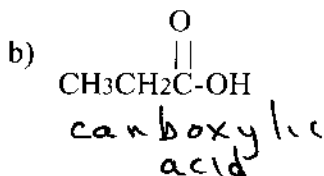
1. Draw the structure of an example (do not use R) of each of the following classes of compounds.



2. What family does each of the compounds shown belong to? Be specific; indicate 1°, 2°, or 3° if appropriate.

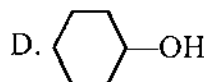
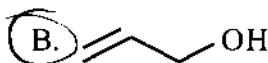
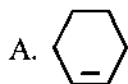


2° alcohol



2° amine

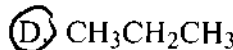
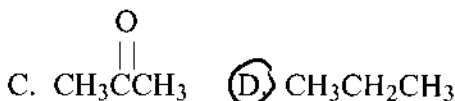
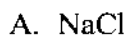
3. Which of the following compounds has absorptions in the 3400-3650  $\text{cm}^{-1}$  and 1640-1680  $\text{cm}^{-1}$  regions of the IR spectrum?



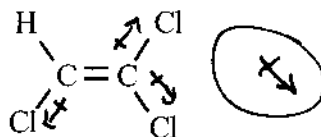
O-H

C=C

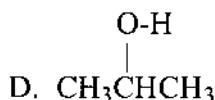
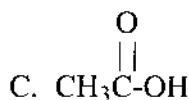
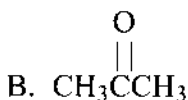
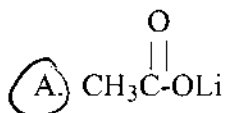
4. Which of the compounds shown is the LEAST soluble in water?



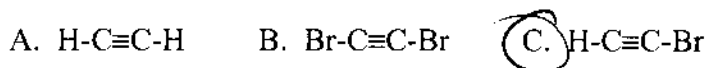
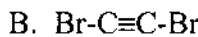
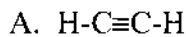
5. Indicate the direction of the dipole moment of the molecule shown.



6. Which of the following compounds has the highest boiling point?



7. Which of these molecules has the largest dipole moment?



8. What is the strongest type of intermolecular force present in a pure sample of  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ?

Van der Waals forces