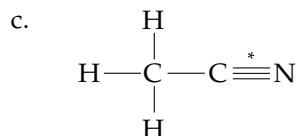
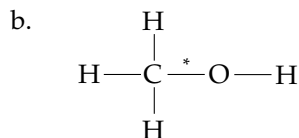
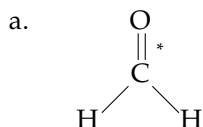


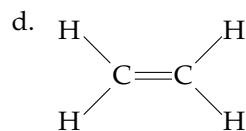
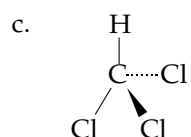
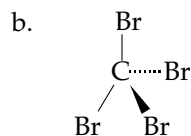
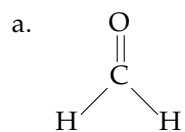
Entry Level Test

- Which of the following statements best describes the covalent bond present in a molecule of hydrogen fluoride?
 - The electrons are equally shared between the two atoms.
 - The electrons spend a greater proportion of their time closer to the fluorine nucleus than to the hydrogen nucleus.
 - The electrons spend a greater proportion of their time closer to the hydrogen nucleus than to the fluorine nucleus.
- Without looking at the periodic table, arrange the following elements in order of decreasing electronegativity: carbon, nitrogen, oxygen, fluorine.
- Without looking at the periodic table, indicate the positive and negative ends of the bonds marked with an asterisk (*) in each of the structures listed below.



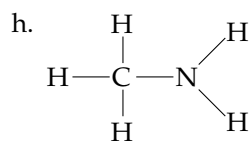
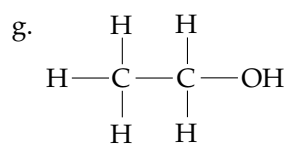
- The C—H bond is regarded as being nonpolar in most organic compounds because the _____ of carbon is similar to that of hydrogen.
- Briefly explain why the fact that water possesses a dipole moment leads to the conclusion that the H₂O molecule is nonlinear.

6. Which of the molecules listed below do *not* possess a dipole moment (i.e., which are nonpolar)?



e. CO₂

f. C₄H₁₀



7. Carbon disulphide, CS₂, is nonpolar. What can you conclude about the shape of the CS₂ molecule from this piece of information?

19. Identify the Lewis acid and base in the equation below.

