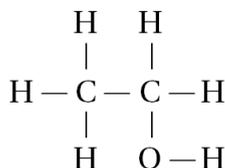


1. What types of elements tend to combine to form molecular compounds?
2. What information does a molecule's molecular structure give?
3. How do ionic compounds and molecular compounds differ in their relative melting and boiling points?
4. Calculate the total energy needed to dissociate all the bonds in one mole of ethyl alcohol, C_2H_5OH . The structural formula of ethyl alcohol is

Bond	Energy (kJ/mol)
H—H	435
C—H	393
C—O	356
O—H	464
C—C	347



5. Draw the electron dot structure for nitrogen trichloride, NCl_3 .
6. Draw the electron dot configuration for acetylene, C_2H_2 .
7. Draw the resonance structures for CO_3^{2-} ?
8. Draw the electron dot diagrams for the following and answer the questions about each.



What shape? _____

Bond Angles? _____

Classify each of these statements as always true, AT; sometimes true, ST; or never true, NT.

_____ 9. If two or more atoms are covalently bonded together, a molecule of a compound results .

_____ 10. The compound OF_2 contains two double covalent bonds.

_____ 11. The tendency of carbon to form four bonds to other atoms can be explained by the four p electrons in its outer shell.

_____ 12. Unshared pairs of electrons affect the shape of molecules.

13. What type of bond covalent or ionic—will form between each pair of atoms?

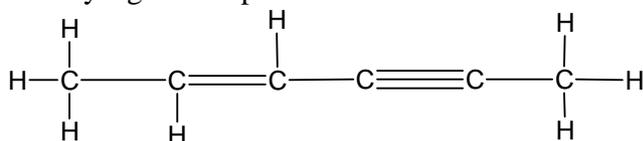
a. Na and O

b. O and O

c. P and O

14. Which would you expect to have the higher melting point, CaO or CS_2 ? Why?

15. How many sigma and pi bonds are in the molecule below



16. Use a diagram to show how s orbitals make a sigma bond.

17. Use a diagram to show how p orbitals make a pi bond.

18. What is an isomer?

19. What determines the shape of a molecule?

20. What is the bond angle in a molecule with

a) double bond

c) all single bonds

e) a triple bond

b) sp^3 hybridization

d) sp^2 hybridization

f) sp hybridization