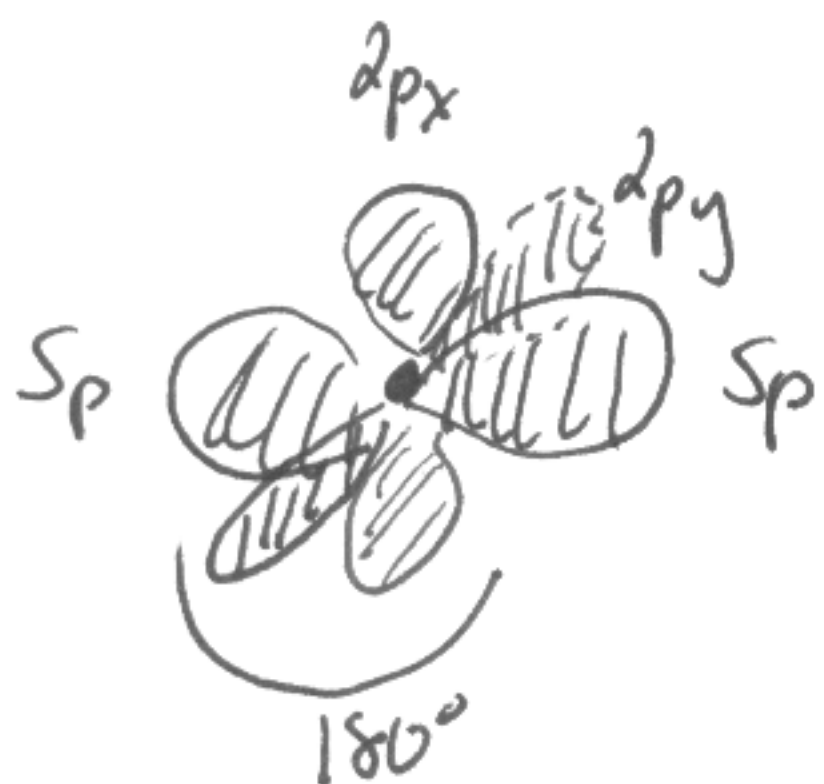


CH30114 Fall 2011

①

Homework 11 Key

1. C:  $SN=2$   $sp$  hybridized



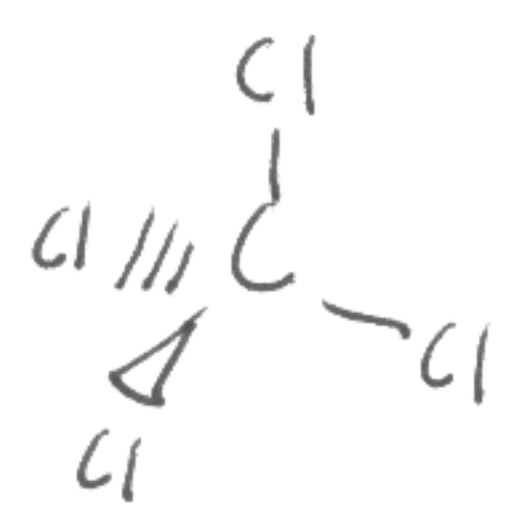
C:  $SN=3$   $sp^2$  hybridized



C:  $SN=4$   $sp^3$  hybridized



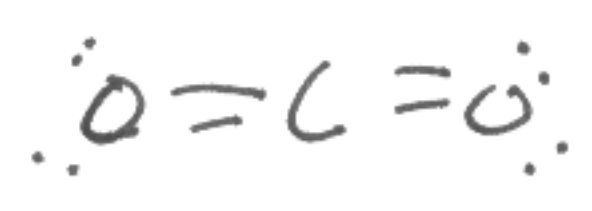
2. a) CCl<sub>4</sub>



C: sp<sup>3</sup>

tetrahedral

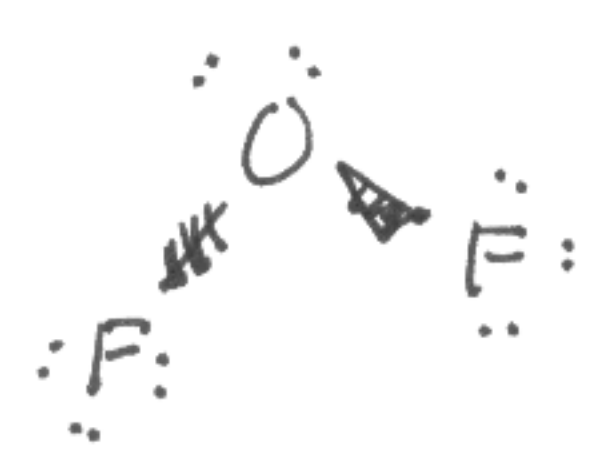
b) CO<sub>2</sub>



C: sp

linear

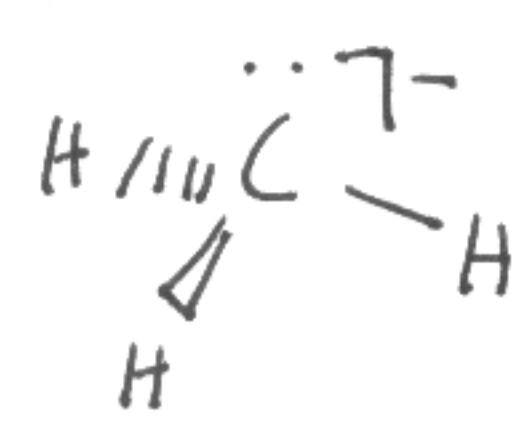
c) OF<sub>2</sub>



O: sp<sup>3</sup>

tetrahedral

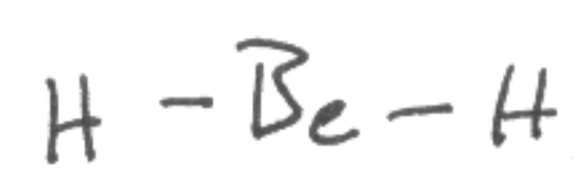
d) CH<sub>3</sub><sup>-</sup>



C: sp<sup>3</sup>

tetrahedral

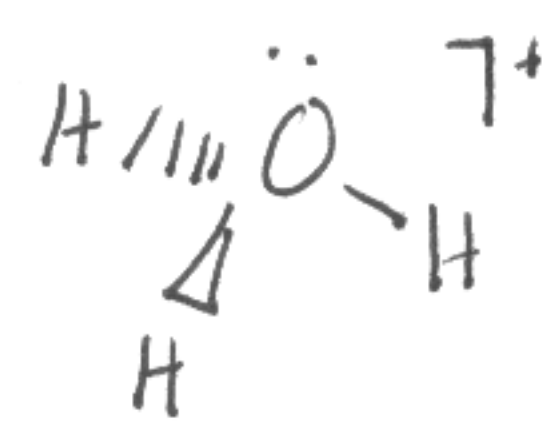
e) BeH<sub>2</sub>



Be: sp

linear

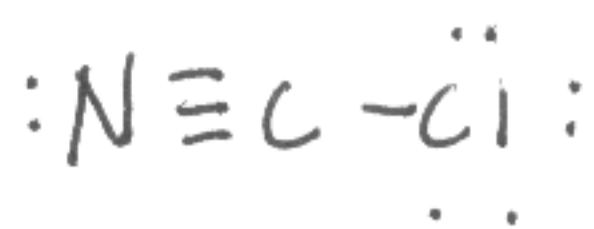
f) H<sub>3</sub>O<sup>+</sup>



O: sp<sup>3</sup>

tetrahedral

3.  $\text{NCCl}$ :



C:  $\text{sp}$

N:  $\text{sp}$

Cl: doesn't matter

3

N

C

Cl



doesn't matter if  
is hybridized - 2s  
available for bonding

N

C

Cl



$180^\circ$

4. CF<sub>4</sub> : C = sp<sup>3</sup> hybridized

