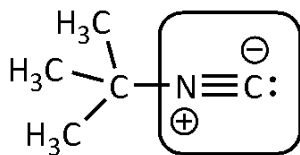


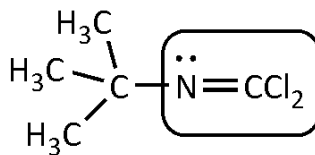
Quiz 1 (25 points)

Name \_\_\_\_\_ ANSWERS \_\_\_\_\_

For questions 1-5, Consider the structures shown below.



A



B

1. For A, what is the hybridization of each of the atoms inside the box?

**nitrogen –  $sp$  carbon -  $sp$**

2. For A, what type of atomic orbital does the lone pair of electrons occupy?

**$sp$  hybrid orbital**

3. For B, what is the hybridization of the nitrogen atom?

**$sp^2$  hybrid orbital**

4. For B, what type of atomic orbital does the lone pair of electrons occupy?

**$sp^2$  hybrid orbital**

5. For B, what is the approximate bond angle for the N-C-Cl bonds?

**approximate bond angle is  $\sim 120^\circ$  and is based on trigonal planar geometry of the carbon**