

- 2 1. Write an equation which shows NH_3 reacting as an acid (a) and another equation which shows NH_3 reacting as a base (b).

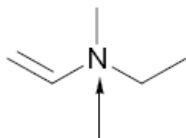
(a)

(b)

- 2 2. Give the hybridization of the indicated atoms and the angles requested. Draw in the lone pairs first.

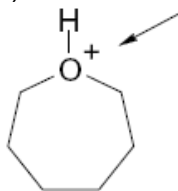
(a)

CNC Angle



(b)

COC Angle



- 2 3. Write Lewis structures of two resonance contributors for the following. Use lines for a pair of bonding electrons. Show lone pairs and formal charges.

(a) $\text{HCON}(\text{CH}_3)_2$ an amide

- 2 4. How many valence electrons do the following atoms or ions have?

a) Nitrogen atom _____

b) Silicon atom _____

c) Sodium ion _____

d) Oxide ion _____

- 2 5. Draw the Lewis structure of ammonia.

6. The pK_a of HCN is 10 and the pK_a of acetic acid is 5. Which is a stronger **acid** HCN or acetic acid?

Formal Charges, Resonance, Acid/Base
Worksheet A

CHEM2320

NAME: _____