1. 

(a) Complete the partial Lewis dot structures for each compound above by adding lone electron pairs and multiple bonds as needed. Don’t worry about formal charge (yet).

(b) For HCN above, draw an arrow (→) corresponding to the molecular dipole moment.
2. Three contributing resonance structures for diazomethane are shown below.

(a) Write in the formal charge on each atom above. It’s OK to leave a blank if the formal charge is zero, and all the lone pairs of electrons are already indicated.

(b) Draw electron-pushing arrows to show how resonance structure A can be converted to B and how B is converted to C.

(c) Which of the three resonance structures is the “best?” Briefly explain your answer.

3. Consider the two reactions below:

(a) Label each reactant as either a Brønsted-Lowry acid, Brønsted-Lowry base, Lewis acid, or Lewis base.

(b) Using the electron-pushing arrows shown, draw the product(s) of each reaction. It is not necessary to draw a full Lewis dot structure, but keep track of electronic charge.