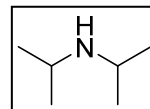


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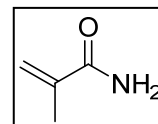
1. What is the hybridization and molecular geometry for the nitrogen atom molecule below? (1 point)

- a. sp , linear c. sp^3 , tetrahedral
b. sp^2 , trigonal planar d. sp^3 , trigonal pyramidal

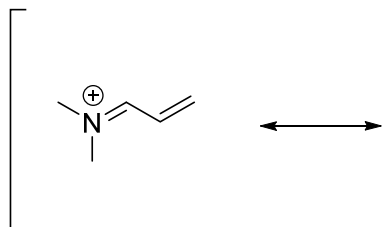


2. What is the hybridization and molecular geometry for the nitrogen atom molecule below? (1 point)

- a. sp , linear c. sp^3 , tetrahedral
b. sp^2 , trigonal planar d. sp^3 , trigonal pyramidal



3. a. Draw as many reasonable resonance structures as you can for the following molecules using correct curved arrows to show electron movement.
b. Label the major resonance contributor and provide a **one phrase** explanation. (4 points)



4. a. Provide products **and** curved arrows for the following acid base reaction.
b. Provide the pK_a of the acid **and** conjugate acid and use this to predict the direction and magnitude of the equilibrium (4 points)

