

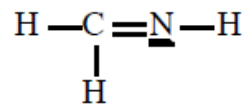
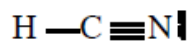
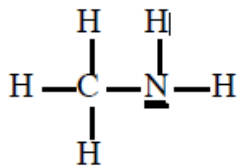




CHEM-01A

Work Session 8B: Atomic Properties and Chemical Bonds

11. Arrange the following in order of carbon to nitrogen bond energy. Also indicate the order of bond length.



12. Which of the bonds in the molecules above are polar covalent?
13. Electronegativity can be used to calculate oxidation numbers. The more electronegative atom gets a minus, the less electronegative atom a plus, for each bond between them. The algebraic sum of the pluses and minuses on each atom gives the oxidation number. Using this method, hydrogen is +1 in each compound in question 11. What are the oxidation numbers of C and N in each compound?  
 (Note: An easy way to do this is to change each bond line into an arrow pointing at the more electronegative atom. Each arrow head gives a (-) to the atom it touches, each arrow tail gives a (+) to the atom it touches. Add together the pluses and minuses.)

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14. How is electronegativity related to atomic size?