

LEWIS STRUCTURES - GENERAL CHEMISTRY

FORMATIVE ASSESSMENT - KEY



STUDENT CHECK FOR UNDERSTANDING

Concepts:
Single Bonds,
Double Bonds,
Triple Bonds,
Electronegativity,
Bond Polarity

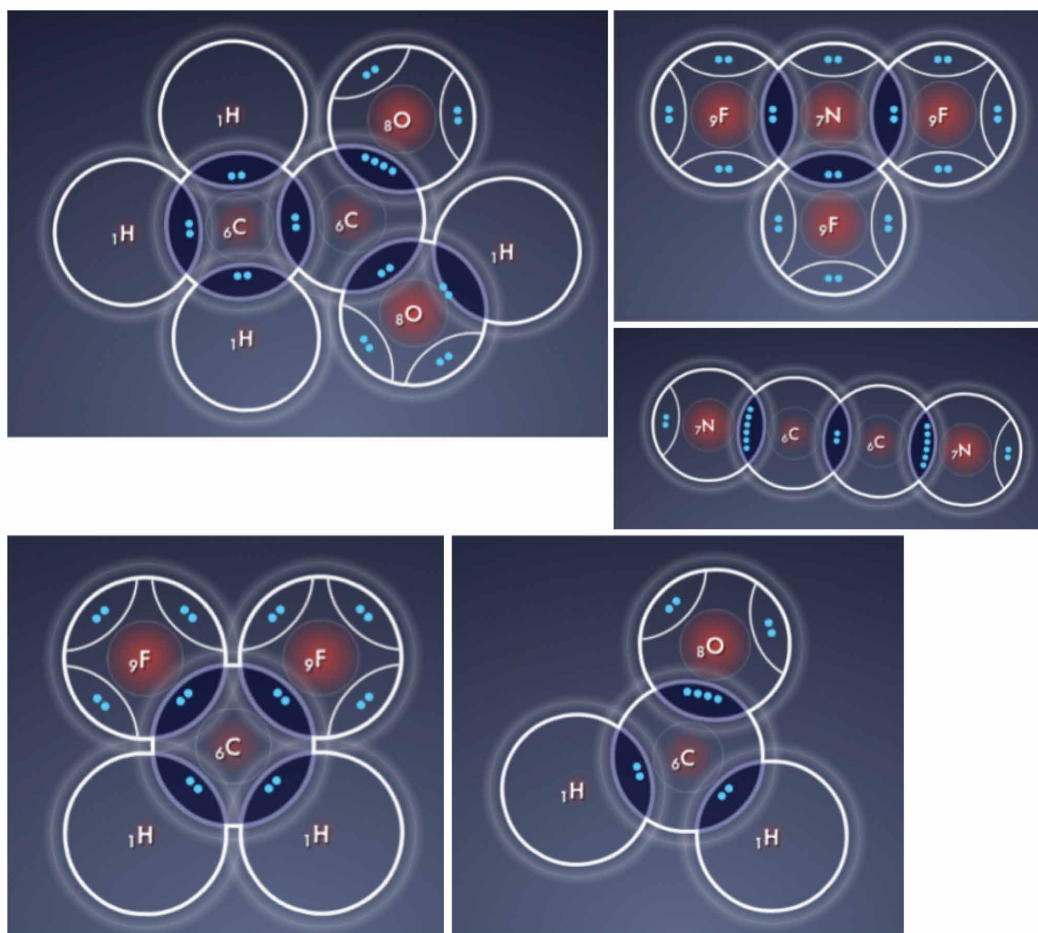
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DIRECTIONS:

Each of the molecules below was created using at least two of the following elements:

carbon (C), nitrogen (N), oxygen (O), hydrogen (H), and fluorine (F).

Correctly identify each atom by writing the atomic symbol in the blank space. Study the number of bonds, nonbonding electrons, and bond polarities to help you complete the task. Use the sandbox to help you. Once you finish, complete the task on the second page.

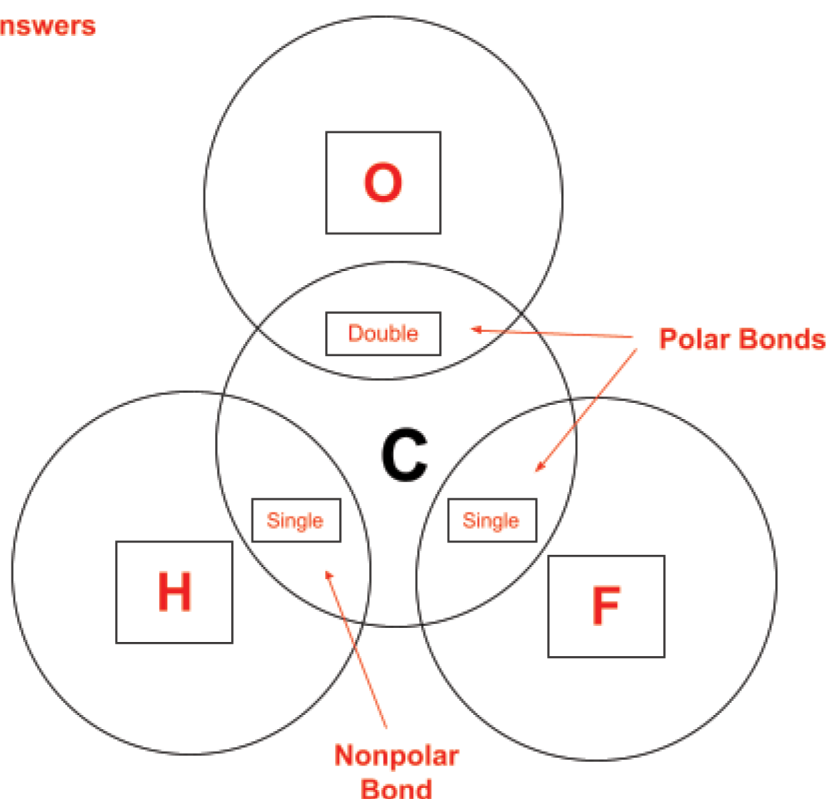


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You have been tasked with creating a molecule that has two polar bonds, one of which should be a double bond, and has carbon as the central atom. Label the structure below with the elements from the sandbox you would choose to complete the task. In the space where the atoms overlap, write the word “single”, “double”, or “triple” to indicate the bond that would be there. In the space beneath the molecule, briefly explain how it meets the required characteristics.

Multiple Answers Possible



JUSTIFICATION

The molecule in the image meets the requirements because:

- The octets of carbon, oxygen, and fluorine are filled.
- The duet of hydrogen is also filled.
- The octet of oxygen is filled by the formation of the required double bond.
- The substance also contains one of two required polar bonds between highly electronegative oxygen and less electronegative carbon.
- The substance also contains one of two required polar bonds between the highly electronegative fluorine and less electronegative carbon.