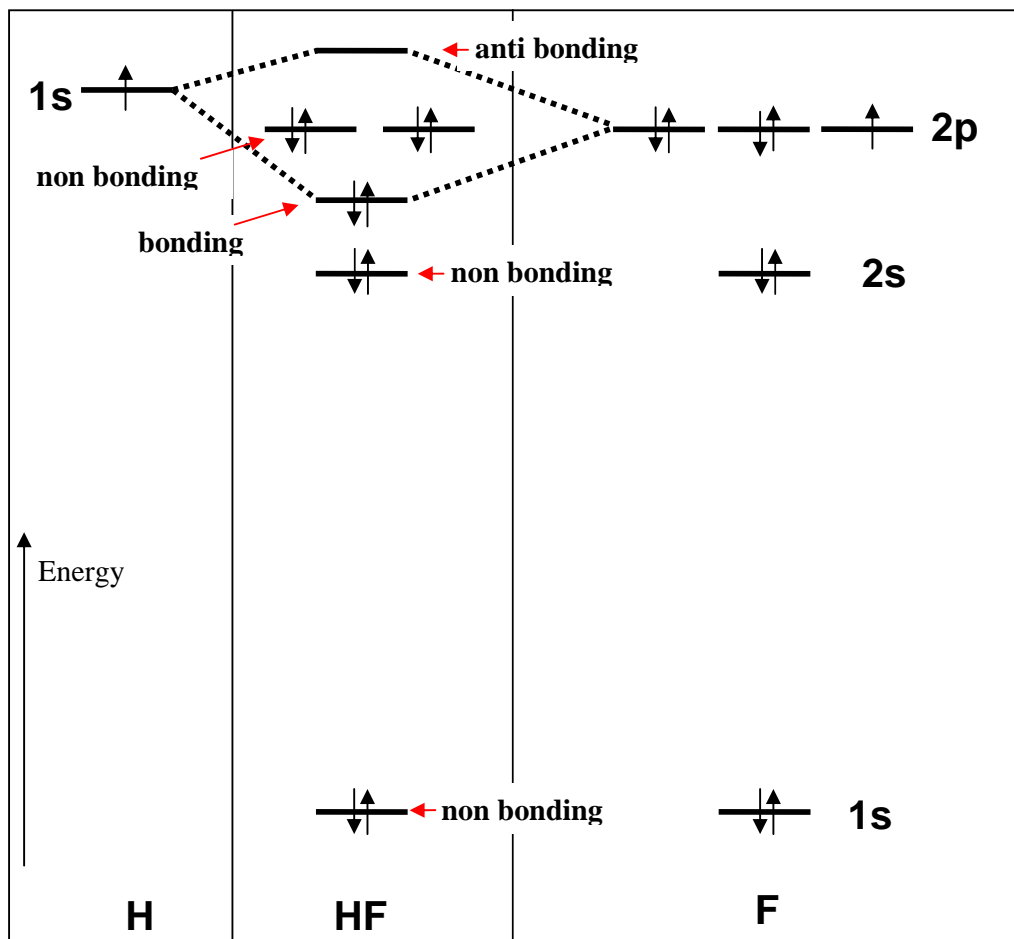


Marks

6

- The following diagram shows the energy level diagram for the molecular orbitals in the HF molecule (centre), in comparison to the atomic energy levels of hydrogen (left) and fluorine (right).



Add the ground state electron configuration to the diagrams for all three species using the arrow notation for electron spin.

Label the orbitals of HF according to whether they are bonding, non-bonding, or anti-bonding.

Sketch the  $\sigma$ -bonding orbital showing the position of the atomic nuclei.

