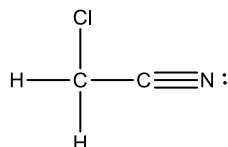
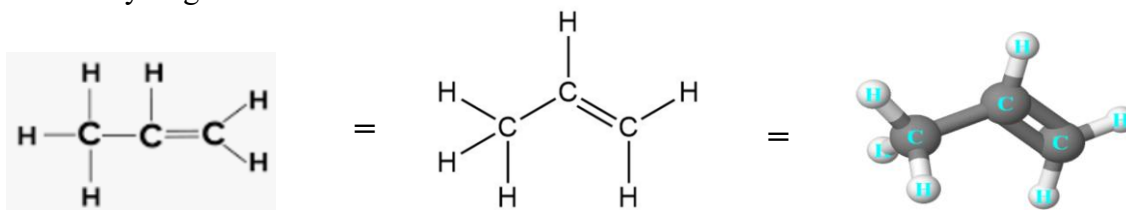


Questions on Valence Bond Theory¹

- Draw the Lewis structures for these molecules and determine the hybridization of each atom in the molecule.
 - CO_2
 - O_2
 - PCl_3
- For the following molecule:
 - How many sigma bonds and how many pi bonds are there?
 - State the hybridization of each atom.
 - Give the geometry of the carbons.



- Propene (C_3H_6) is a starting material used to manufacture polypropylene polymers. Its three carbon atoms are connected in a row as shown in the following 3 diagrams. Indicate the type of orbital (ex. s, sp^3 , etc.) of each atom that overlaps to form the carbon-carbon (double bond and single bonds) and carbon-hydrogen bonds.



H-C (single bond)	
C - C (single bond)	
C = C (double bond)	