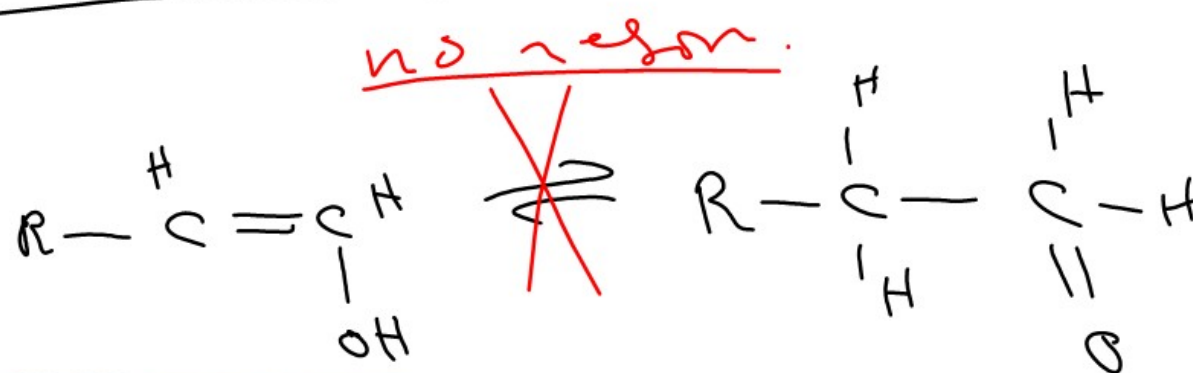
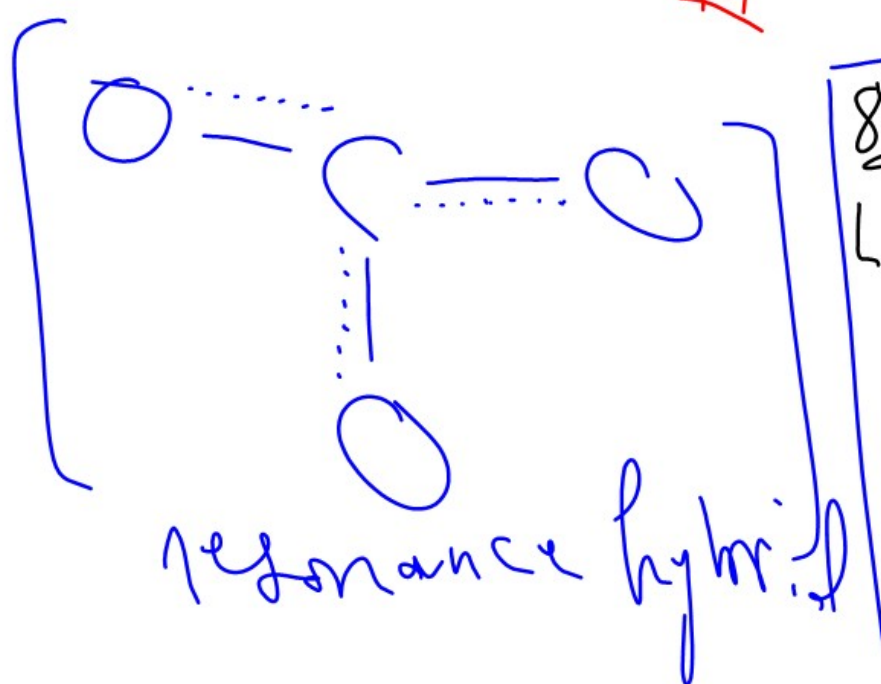
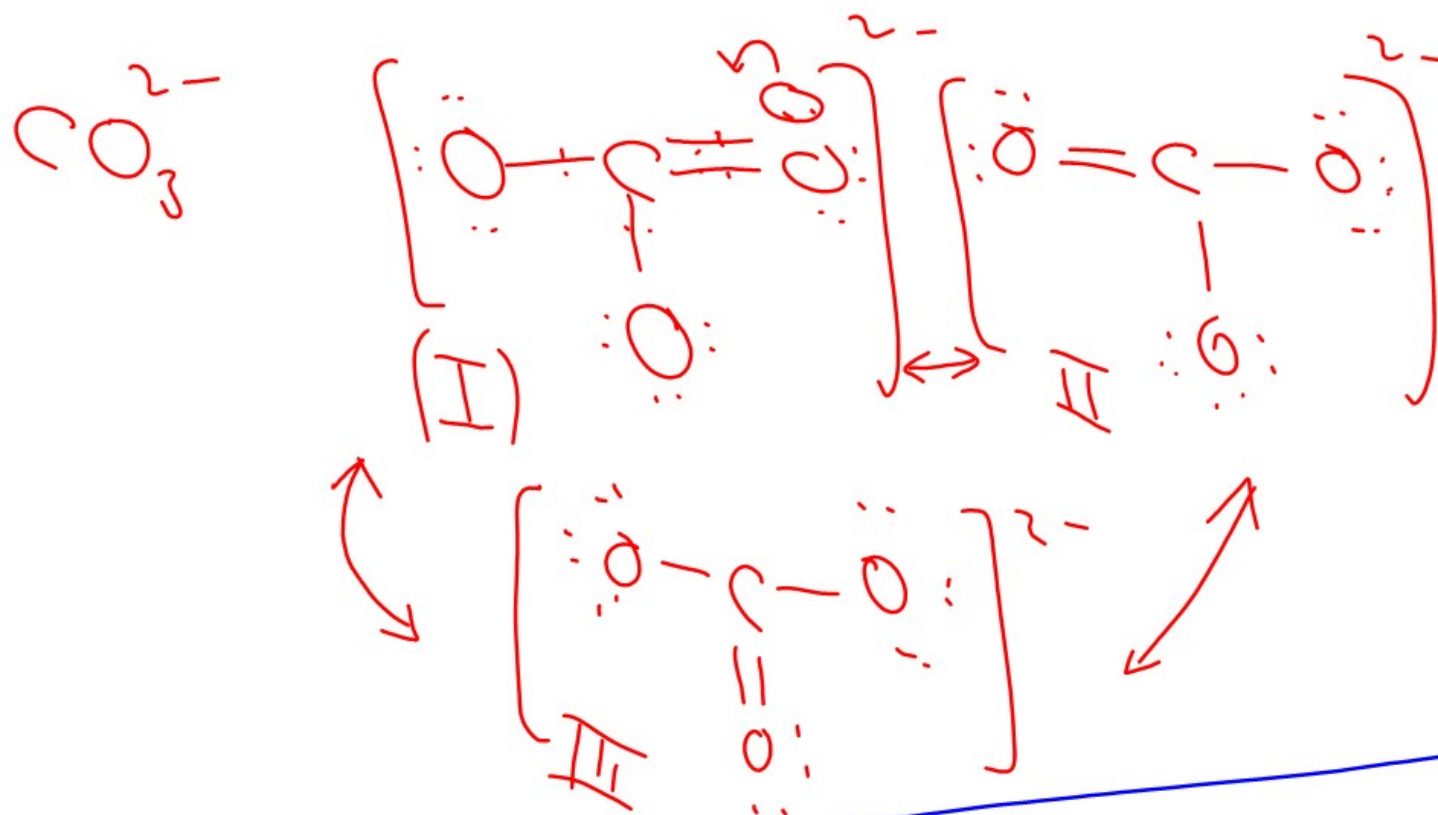


# Resonance Structures



Resonance imaginary & struct.



8-e rule

Li Be

B C N O F



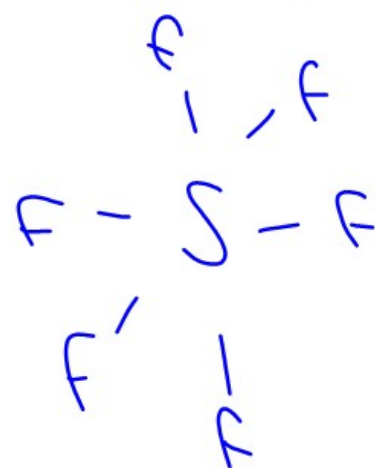
Li Be

Mg

|    |    |   |   |    |
|----|----|---|---|----|
| B  | C  | N | O | F  |
| Al | Si | P | S | Cl |

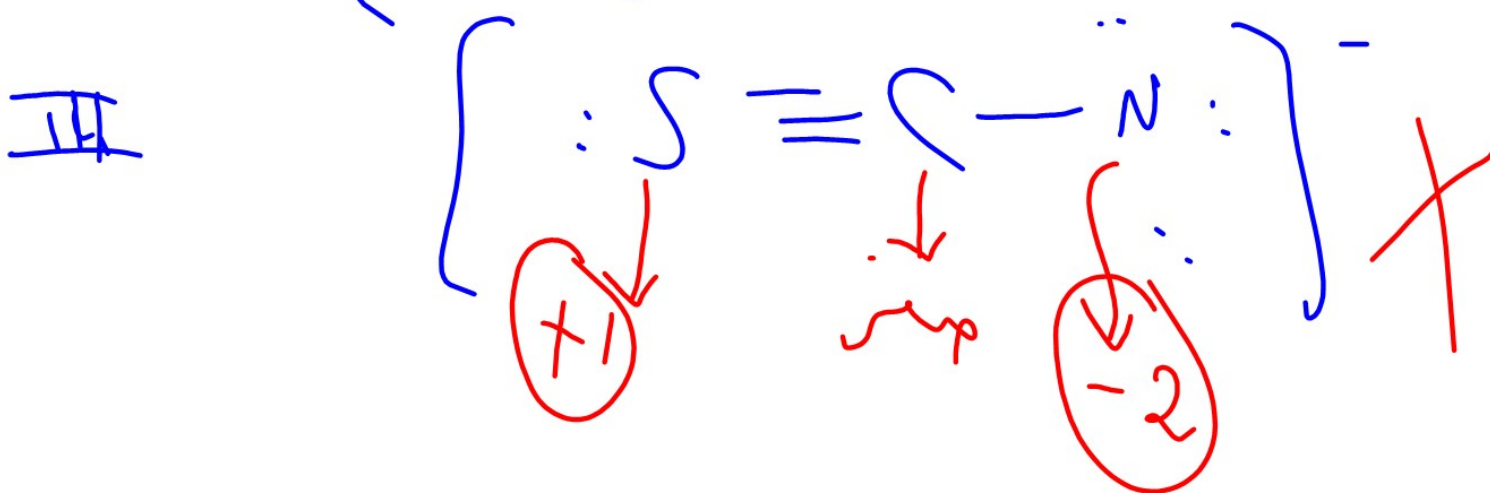
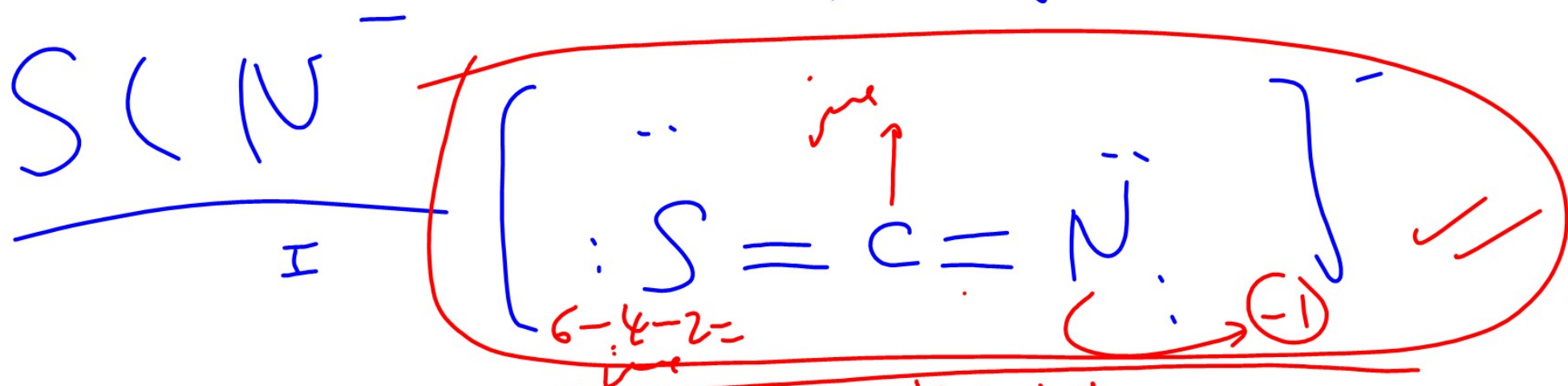
1s 2s 2p

1s 2s 2p 3s 3p 4s 3d

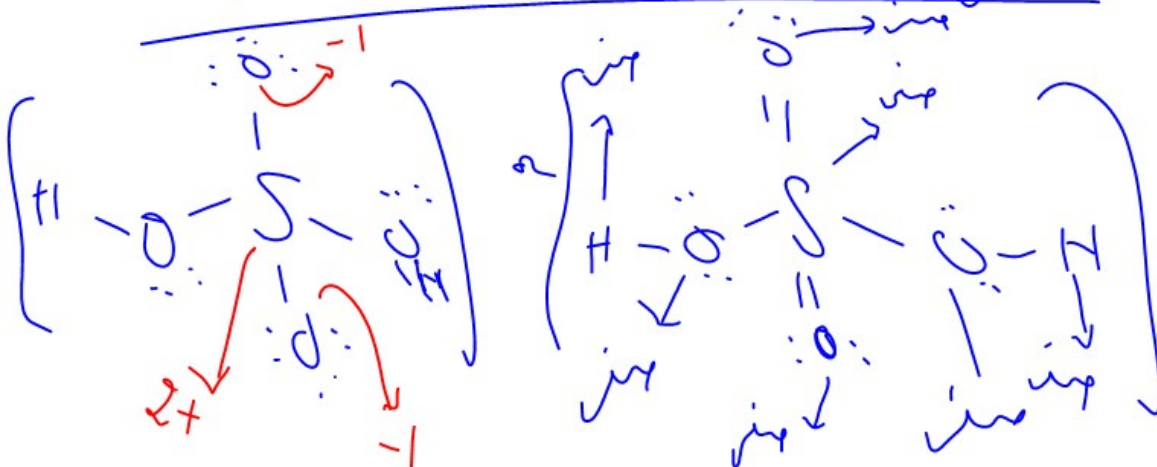
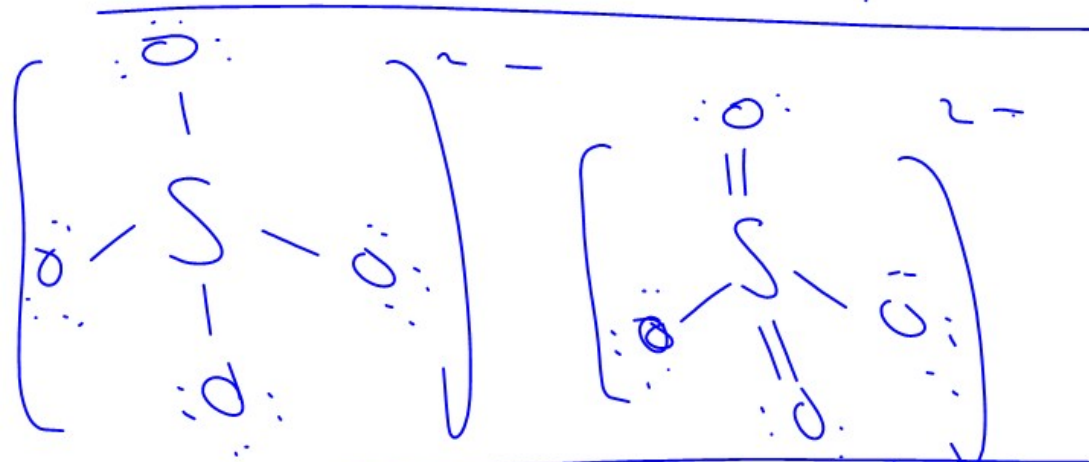
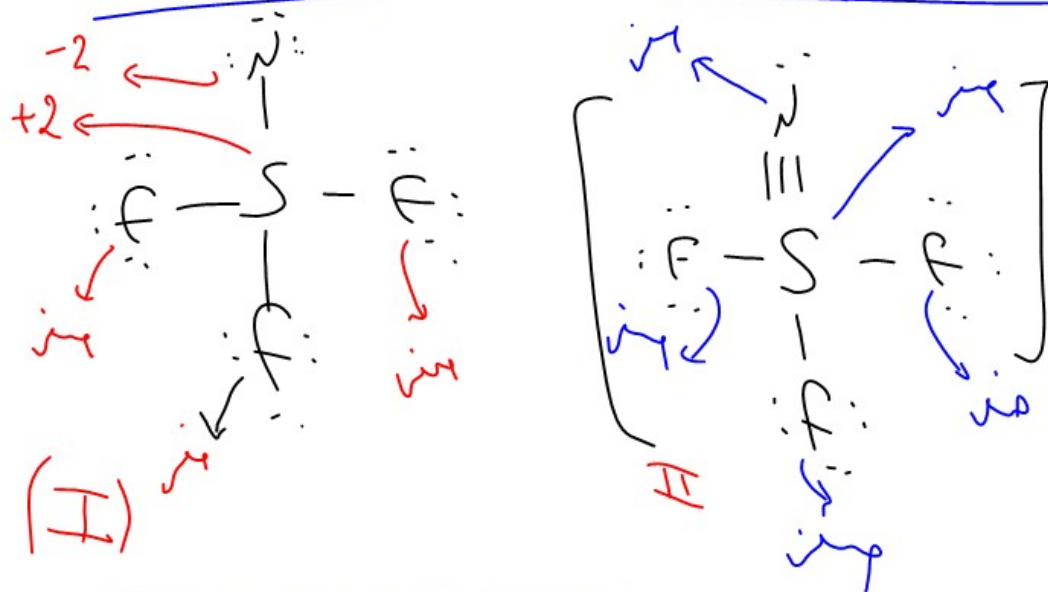
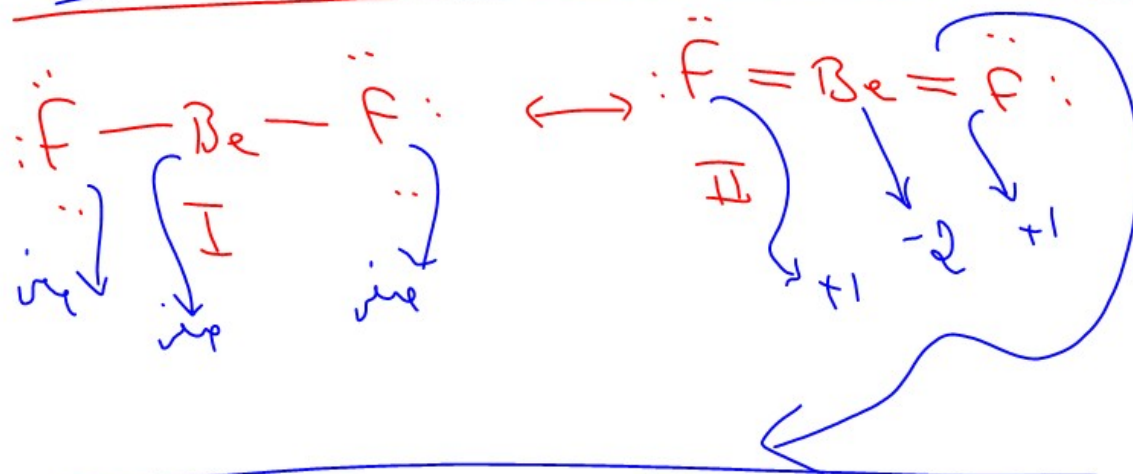
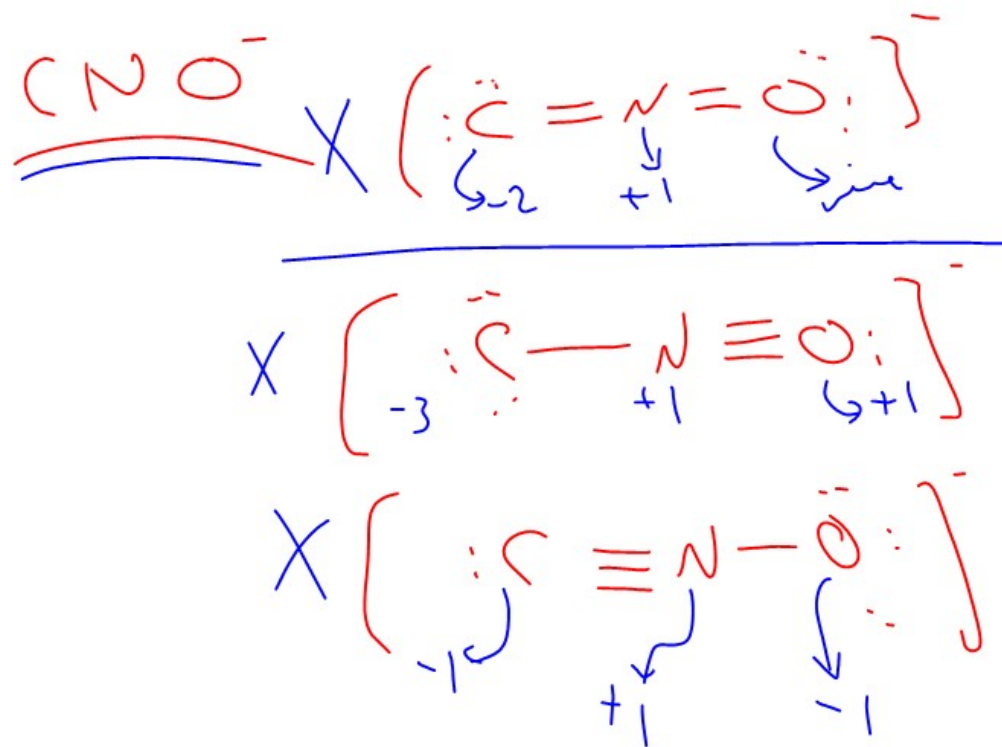


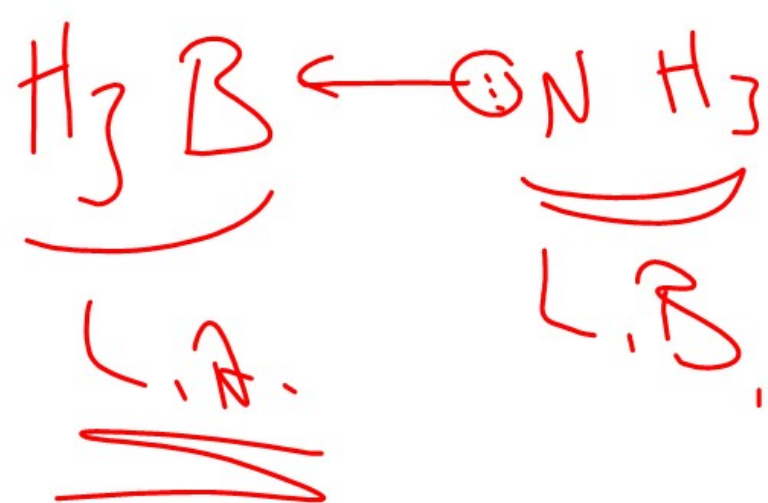
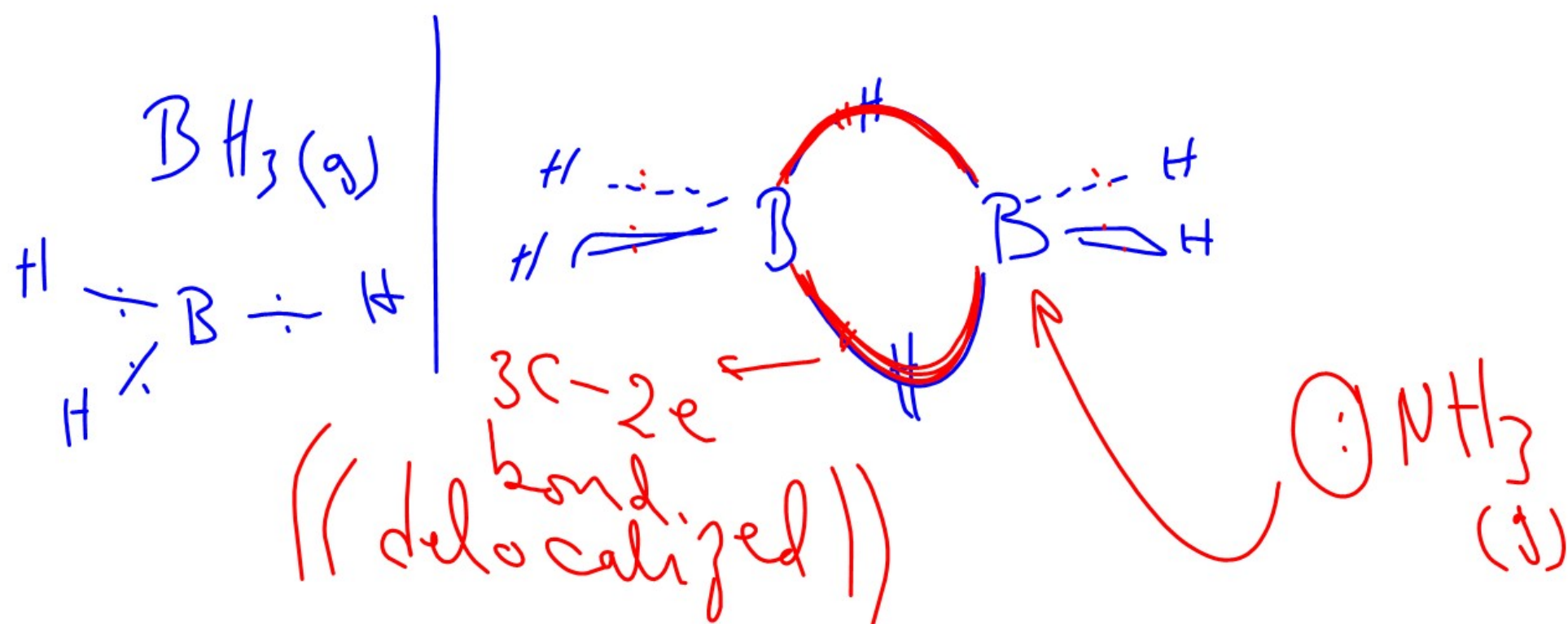
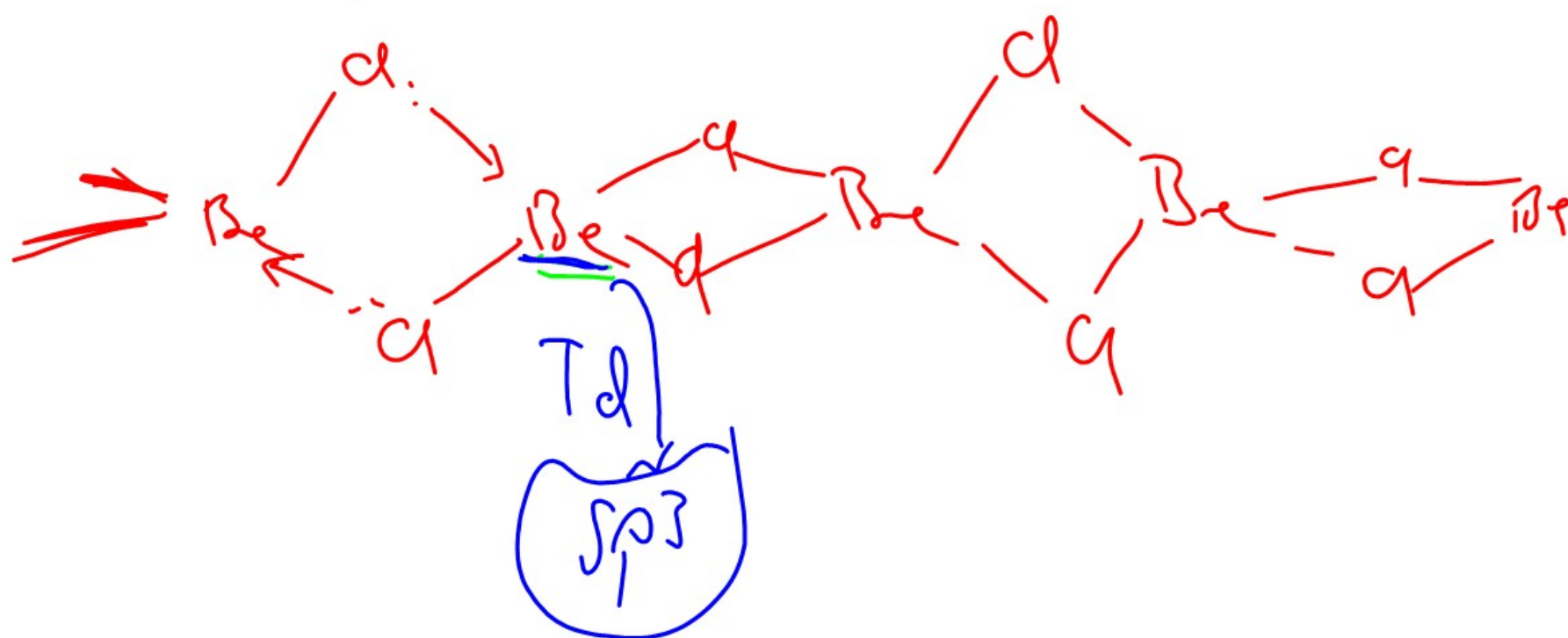
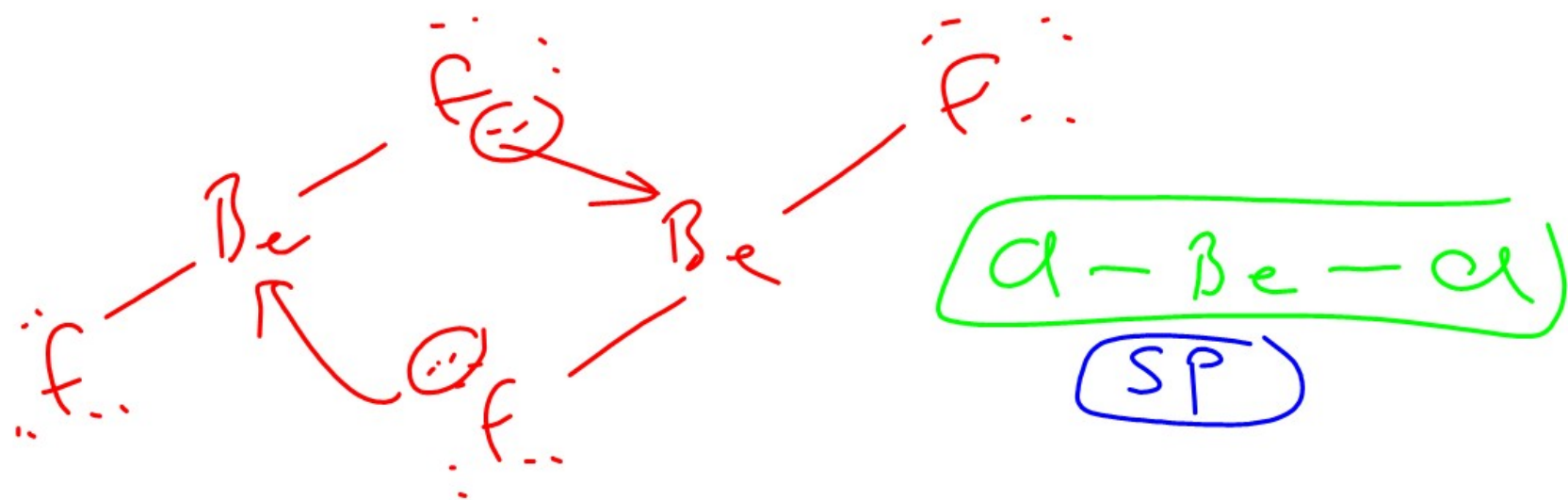
low lying 3d orbitals

Formal Charge: 
$$= \left( \begin{array}{l} \text{no. of } e^- \\ \text{in valence} \\ \text{shell of} \\ \text{atom} \end{array} \right) - \left( \begin{array}{l} \text{no. of } e^- \\ \text{unshared} \\ \text{(no. of covalent bonds)} \end{array} \right)$$

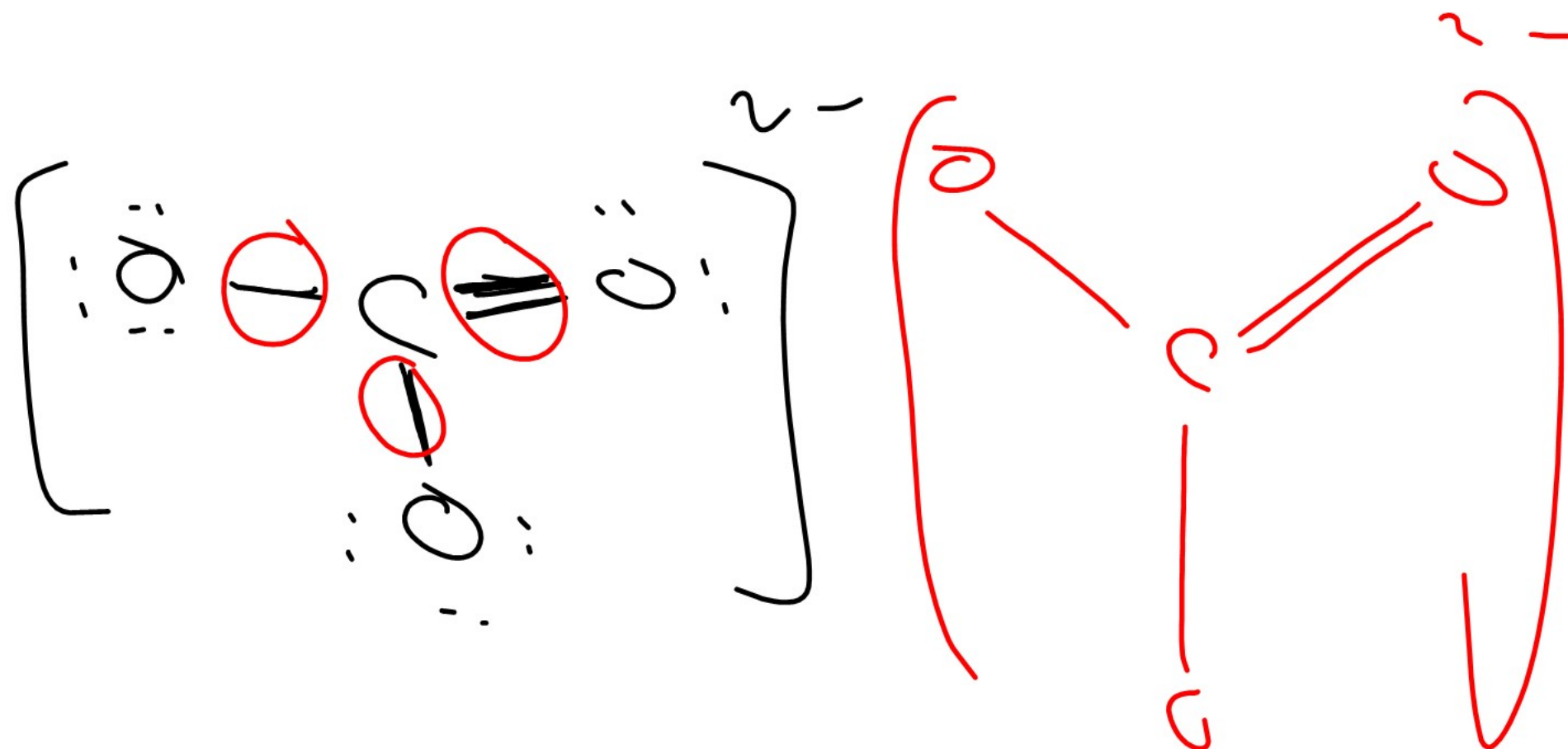




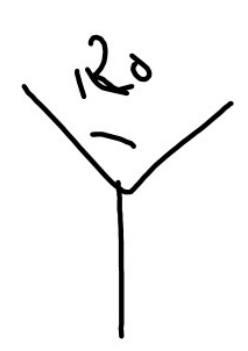
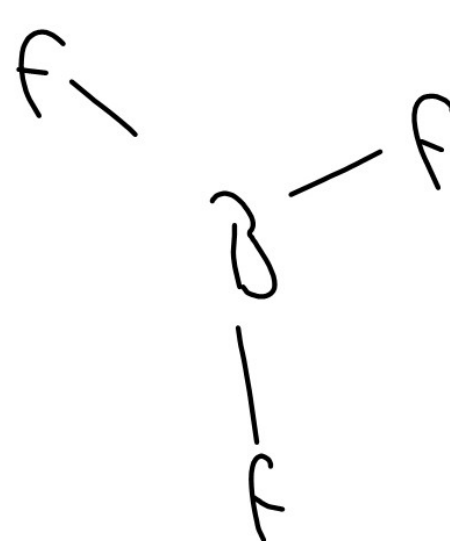




# VSEPR Theory





| Example        | L.S. + ut.                                                                      | no. of<br>e-groups | e-group<br>struct.                                                                                | molecular<br>shape                                                                                                       |
|----------------|---------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| $\text{BeF}_2$ | $\begin{array}{c} \text{Be} : \text{F} : \\ : \text{F} : \end{array}$           | 2                  | Linear<br>     | $\text{F} - \text{Be} - \text{F}$<br> |
| $\text{BF}_3$  | $\begin{array}{c} \text{F} : \text{B} : \text{F} : \\ : \text{F} : \end{array}$ | 3                  | <br>pl. trig. |                                     |

