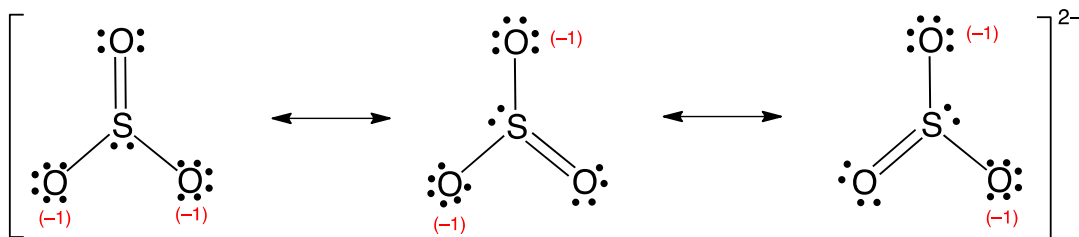


CONCEPT: AVERAGE BOND ORDER

- The average number of chemical bonds between a pair of elements.

- ☐ Single bond = Bond Order of _____
- ☐ Double bond = Bond Order of _____
- ☐ As the average bond order \uparrow , the strength of the bond _____, and the length of the bond _____.

EXAMPLE: What is the average bond order of the sulfur–oxygen bonds within the sulfite ion?



STEP 1: If given only the molecular formula, then draw _____ of the resonance structures.

- ☐ If given multiple resonance structures, choose one of them.

STEP 2: Count the _____ number of bonds between the surrounding elements involved.

STEP 3: Divide the number of bonds by the total number of those surrounding elements.

PRACTICE: What is the bond order of the phosphate–oxygen bonds within the phosphate ion, PO_4^{3-} ?