Resonance — Contributors and Delocalization

STUDENT WORKSHEET • NAME: _____ DATE: _____

RESONANCE

Move electrons—not nuclei; preserve overall charge



NO_2^-: two equivalent major contributors

The atoms remain connected in the same order.

Instructions: Show electron counts and charges when requested. Draw structures clearly and label lone pairs.

1. **How many equivalent common major resonance contributors does NO_3^- have?**

2. **How many equivalent major contributors does NO_2^- have?**

3. **How many equivalent common contributors does CO_3^{2-} have?**

4. **How many equivalent major contributors does O_3 have?**

5. **Do atoms move between the resonance contributors of NO_2^-? Explain.**

6. **What is the net charge of NO_3^- in every resonance contributor?**

7. **Does the actual carbonate ion repeatedly alternate between isolated single- and double-bond structures?**

8. **What type of arrow correctly separates resonance contributors?**