

COVALENT BONDING

Name _____

Covalent bonding occurs when two or more nonmetals share electrons, attempting to attain a stable octet of electrons at least part of the time. For example:

*H wants 2 electrons
all other atoms 8*



Note that hydrogen is content with 2, not 8, electrons.

electrons in the middle share

Show how covalent bonding occurs in each of the following pairs of atoms. Atoms may share one, two or three pairs of electrons.

wanted available share

1. $\text{H} + \text{H} (\text{H}_2)$ W - 4 A - 2 S - 2	<i>wanted 2 + 2</i> <i>available</i> $\text{H} \cdot \cdot \text{H}$ $\text{H} \cdot \quad \cdot \text{H}$	$\text{H} - \text{H}$ <i>single bond = share 2 e⁻</i>
2. $\text{F} + \text{F} (\text{F}_2)$ W - 8 + 8 = 16 A - 7 + 7 = 14 S - 2	$\cdot \ddot{\text{F}} \cdot \cdot \ddot{\text{F}} \cdot$ <i>2 e⁻</i>	$\cdot \ddot{\text{F}} - \ddot{\text{F}} \cdot$ <i>single bond 2 e⁻</i>
3. $\text{O} + \text{O} (\text{O}_2)$ W - 8 + 8 = 16 A - 6 + 6 = 12 S - 4	$\cdot \ddot{\text{O}} \cdot \cdot \ddot{\text{O}} \cdot$ <i>4 e⁻</i>	$\cdot \ddot{\text{O}} = \ddot{\text{O}} \cdot$ <i>4 double bond</i>
4. $\text{N} + \text{N} (\text{N}_2)$ W - 8 + 8 = 16 A - 5 + 5 = 10 S - 6	$\cdot \ddot{\text{N}} \cdot \cdot \ddot{\text{N}} \cdot$	$\cdot \ddot{\text{N}} \equiv \ddot{\text{N}} \cdot$
5. $\text{C} + \text{O} (\text{CO}_2)$ W - 8 + 8 + 8 = 24 A - 4 + 6 + 6 = 16 S - 8	$\cdot \ddot{\text{O}} \cdot \cdot \ddot{\text{C}} \cdot \cdot \ddot{\text{O}} \cdot$	$\cdot \ddot{\text{O}} = \text{C} = \ddot{\text{O}} \cdot$
6. $\text{H} + \text{O} (\text{H}_2\text{O})$ W - 2 + 2 + 8 = 12 A - 1 + 1 + 6 = 8 S - 4	$\text{H} \cdot \cdot \ddot{\text{O}} \cdot \cdot \text{H}$	$\text{H} - \ddot{\text{O}} - \text{H}$

Ws 4 4 Bonding Ionic And Covalent Answers

Sir Tarun Rupani



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in the review and practice of chemistry topics Chemistry covers topics such as metrics and measurements matter atomic structure bonds compounds chemical equations molarity and acids and bases The book includes realistic diagrams and engaging activities to support practice in all areas of chemistry The 100 Series science books span grades 5 to 12 The activities in each book reinforce essential science skill practice in the areas of life science physical science and earth science The books include engaging grade appropriate activities and clear thumbnail answer keys Each book has 128 pages and 100 pages or more of reproducible content to help students review and reinforce essential skills in individual science topics The series will be aligned to current science standards **Glencoe Science** McGraw-Hill Staff,2001-08 **Chemistry**

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Addison-Wesley Science Insights, 1996 *The Physics and Chemistry of Solids*, 1959 **Proceedings**, 1959 Earth Science Samuel N. Namowitz, Nancy E. Spaulding, 1989 **Chemistry** John S. Phillips, Cheryl Wistrom, 2000 **Essential Biology** Neil A. Campbell, Jane B. Reece, Eric Jeffrey Simon, 2007

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