

Name: _____ Date: _____ Period: _____

AP Chemistry Chapter 7 Essentials Pt I

Chemical Bonding

1. What are the two main types of bonding and how are they different from one another? Give at least 3 properties of each.
2. What are Lewis Dot formulas used for in chemistry and how are they related to the valence electrons of an element?
3. Define ionic bonding. What are the two types of ions involved?
4. What is a polyatomic ion? Give an example of one.
5. What does it mean for two species to be isoelectronic?
6. In an ionic bond formation between a metal and a nonmetal, which species is being oxidized and which is being reduced?
7. Define the crystal lattice energy of an ionic solid.

8. Why is it incorrect to refer to an ionic compound as a molecule?

9. Explain why the compound Li_2O has a melting point temperature twice that of NaCl .

10. What are the three types of covalent bonds that can be formed between atoms? Give an example of each.

11. Give the general trend or relationship between bond energies and bond lengths.

12. What is the octet rule and why is the element Helium an exception to following it?

13. What is the difference between unshared and shared (bonding) electrons in a Lewis Dot Structure?

14. What is the formula ($S = N - A$) used for?

15. Draw the Lewis Dot Structure for CH_4 , CH_2O and HCN .