

# Chapter 08

## Study Guide – Answers

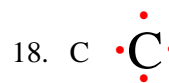
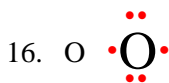
### A. Ionic Bonds

1. An ionic bond is defined as an electrostatic attraction between oppositely charged particles (ions)
2. Name three important properties of ionic compounds  
high melting point conduct electricity in liquid phase brittle
3. Anions tend to form from non-metals when they gain electrons.
4. Cations tend to form from metals when they lose electrons.
5. An ion with a 1+ charge has had 1 electrons stolen.
6. An ion with a 3- charge has stolen 3 electrons.
7. Elements from group VIA tend to form ions with a 2- charge.
8. The names of monatomic anions end with -ide.
9. In an ionic compound the net charges of the cations and anions must be equal.
10. What does “(IV)” mean when written in a compound’s name? the cation has a charge of 4+
11. What does the octet rule say? atoms, gain, lose or share electrons to achieve a full valence shell
12. How many electrons does hydrogen have when it has a complete octet? 2 .

### B. Lewis Structures

13. In a Lewis structure, there may be no more than 8 dots around an atomic symbol.
14. In the Lewis structure for N, there are 2 paired electrons and 3 bonding sites.

Draw Lewis dot diagrams for each of the following:



### C. Writing Formulas

Write names for the following

19.  $\text{Mn}(\text{OH})_5$  manganese (V) hydroxide
20.  $\text{FeCO}_3$  iron (II) carbonate
21.  $\text{Na}_2\text{SO}_4$  sodium sulfate
22.  $\text{Li}_3\text{P}$  lithium phosphide

### D. Naming Substances

Next to each chemical name write the correct empirical formula for each of the following.

23. Titanium (IV) iodide  $\text{TiI}_4$
24. Nickel (II) fluoride  $\text{NiF}_2$
25. Iron (III) bromide  $\text{FeBr}_3$
26. Sodium dihydrogen phosphate  $\text{NaH}_2\text{PO}_4$
27. Manganese (VII) oxalate  $\text{Mn}_2(\text{C}_2\text{O}_4)_7$
28. Sodium hydroxide  $\text{NaOH}$
29. Silver nitrate  $\text{AgNO}_3$
30. Lithium hydroxide  $\text{LiOH}$

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### E. Metallic Bonds

31. Define a metallic bond A bond that occurs between the mobile electrons of metal atoms and the nuclei of those atoms – a lattice of atoms in which the valence electrons are shared in one large “sea of electrons”