

## Chapter 7 Reading Guide

### Section 7.1

1. How are the particles arranged in a crystalline solid?
2. Why do atoms in the same column behave similarly?
3. What is a valence electron?
4. How can you find the number of valence electrons?
5. What is an electron dot structure?
6. What is the octet rule?
7. Why is it called the octet rule?
8. How do metals follow the octet rule?
9. How do nonmetals follow the octet rule?
10. Why is an atom neutral?
11. How do they name cations?
12. Compare the reactions of atoms with their ions.
13. How many valence electrons do metals have?
14. Why does sodium lose one valence electron?
15. Use electron dot structures to show how calcium forms an ion.
16. What types of ions do atoms in group 1A and group 2A form?
17. What is true of the types of ions formed by transition metals?
18. Why does silver form a 1+ ion?
19. How does an anion form?
20. How do they name anions?
21. What types of ions do non-metals in group 5A, 6A and 7A form?
22. Why does chlorine gain 1 electron?
23. What is a halide ion?
24. Use electron dot structures to show how sulfur forms an anion.

### Section 7.2

1. How do they form salt?
2. What is an ionic compound?
3. Why are ionic compounds neutral?
4. What is an ionic bond?
5. What happens to the electrons when sodium chloride forms?
6. Why does aluminum react with three bromine atoms?
7. How are the ions arranged in sodium chloride?
8. What is a formula unit?
9. Why is magnesium chloride neutral?
10. What state of matter are ionic compounds?
11. What evidence is there that sodium chloride has a stable structure?
12. What is a coordination number?
13. When do ionic compounds conduct electricity?
14. What allows the electricity to flow?

### Section 7.3

1. What floats in the sea of electrons?
2. What is a metallic bond?
3. Why are metals good electrical conductors?
4. Why are metals malleable and ductile?
5. Using figure 7.12 explain why ionic compounds are brittle.
6. How are metal atoms arranged in a solid?
7. What are alloys?
8. How are alloys important?
9. What is steel?
10. What is a substitutional alloy?
11. What is an interstitial alloy?