Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chemistry I Honors: Valence Electrons and Ion Configurations

**Circle or highlight the valence electrons in these electron configurations, and then state the total number of valence electrons in each of the following:**

Electron configuration Number of valence electrons

1. 1s2 2s2 2p6 3s2 3p6 **4s1 \_\_\_\_\_\_**

2. 1s22s22p63s23p64s23d104p65s14d5 \_\_\_\_\_\_

3. 1s22s22p63s23p4 \_\_\_\_\_\_

4. 1s22s22p63s23p64s23d2 \_\_\_\_\_\_

5. 1s22s22p63s23p64s23d104p65s24d105p66s24f4 \_\_\_\_\_\_

6. 1s22s22p63s23p64s23d104p65s14d10 \_\_\_\_\_\_

7. [Ne] 3s2 3p5  \_\_\_\_\_\_

8. [Ar] 4s23d5 \_\_\_\_\_\_

9. [Kr] 5s1 4d8 \_\_\_\_\_\_

10. [Xe] 6s2 4f14 5d10 6p5 **\_\_\_\_\_\_**

**Write the shorthand notation for the following atoms or ions:**

11. Fe

12. Fe +3

13. Zn +2

14. O -2

15. Na +

16. Al +3

17. Sn +4

18. Ca +2