Chemistry – Chapter 5 Book assignment #1: Electron configurations & quantum numbers

1. How many orbitals are in the *2p* sublevel?

2. How many sublevels are contained in each of these principal energy levels?

    a. $n = 1$

    b. $n = 2$

    c. $n = 3$

    d. $n = 4$

3. Arrange the following sublevels in order of increasing energy:

    3*d*, 2*s*, 4*s*, 3*p*

4. What is the maximum number of electrons that can go into each of the following sublevels?

    a. 2*s*

    b. 4*s*

    c. 4*p*

    d. 4*f*

    e. 3*p*

    f. 3*d*

    g. 5*s*

    h. 5*p*

5. Give the symbol for the atom that corresponds to each electron configuration.

    a. $1s^2 2s^2 2p^6 3s^2 3p^6$

    b. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^7 5s^1$

    c. $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^{10} 4f^7 5s^2 5p^6 5d^1 6s^2$

6. How many paired electrons are there in an atom of each element?

    a. helium

    b. sodium

    c. boron

    d. oxygen

7. Name the element being described by this quantum number set:

    a. 3, 2, 0, -1/2
    b. 5, 3, 2, -1/2

8. Give the quantum number set for the following elements:

    a. #15
    b. #75