

HOMEWORK 4-6**VOCABULARY**

Write *true* or *false* for each of the following statements.

1. Lines and arrows are used to indicate electron configuration in **electron-configuration notation**.

2. The **spin quantum number** of an electron can have only two possible values. _____
3. The **ground-state electron configuration** is the highest-energy arrangement of electrons for an element. _____
4. According to the **Aufbau principle**, an electron occupies the lowest-energy orbital that will receive it.

5. It requires less energy for two electrons to pair up in the **4d sublevel** than for one to occupy an *f* sublevel. _____

SKILL BUILDING

1. The electron configuration of phosphorus is $1s^2 2s^2 2p^6 3s^2 3p^3$.
 - a. How many electrons are present in an atom of phosphorus? _____ How did you arrive at the answer? _____
 - b. What is the atomic number for phosphorus? _____
 - c. Write the orbital notation of phosphorus. _____

2. Write the electron configuration for the element magnesium, which has an atomic number of 12.

STANDARDIZED TEST PREP

Circle the letter of the best answer.

1. Which of the following is the electron configuration for oxygen (atomic number 8)?
 - a. $1s^2 2s^2 3s^2$
 - b. $1s^2 2s^2 2p^4$
 - c. $1s^1 2s^1 2p^3 3s^1 3p^2$
 - d. $1s^2 2s^2 3s^2 4s^2$
2. Sulfur has the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^4$. That means that sulfur has
 - a. 16 electrons.
 - b. 16 neutrons.
 - c. an atomic number of 16.
 - d. both a and c.