Name _____ Date _____ Class _____

Section 2: The Atom (p. 87)

1. In this section you will learn about the particles inside the atom and the _____ that act on the particles inside the atom.

How Small Is an Atom? (p. 87)

Each of the following statements is false. Change the underlined word to make the statement true. Write the new word in the space provided.

2. A sheet of aluminum foil is about <u>500</u> atoms thick.

_____

3. <u>An Olympic medal</u> contains about twenty thousand billion billion atoms of copper and zinc. _____

What's Inside an Atom? (p. 88)

Choose the term in Column B that best matches the phrase in Column A, and write the appropriate letter in the space provided.

Column A	Column B
___ **4.** particle found in the nucleus that has no charge	**a.** electron cloud
___ **5.** particle found in the nucleus that is positively charged	**b.** electron
___ **6.** particle with an unequal number of protons and electrons	**c.** amu
___ **7.** negatively charged particle found outside the nucleus	**d.** nucleus
___ **8.** size of this determines the size of the atom	**e.** proton
___ **9.** contains most of the mass of an atom	**f.** ion
___ **10.** SI unit used for the masses of atomic particles	**g.** neutron

Review (p. 89)

Now that you've finished the first part of Section 2, review what you learned by answering the Review questions in your ScienceLog.

How Do Atoms of Different Elements Differ? (p. 89)

11. The simplest atom is the _____ atom. It has one proton and one electron.

12. Neutrons in the atom's nucleus keep two or more protons from moving apart. True or False? (Circle one.)

13. If you build an atom using two protons, two neutrons, and two electrons, you have built an atom of _____.

14. An element is composed of atoms with the same number of _____. (neutrons or protons)

Are All Atoms of an Element the Same? (p. 90)

15. It is NOT true that isotopes of an element

- **a.** have the same number of protons but different numbers of neutrons.
- **b.** are stable when radioactive.
- **c.** share most of the same chemical properties.
- **d.** share most of the same physical properties.

Calculating the Mass of an Element (p. 92)

16. The weighted average of the masses of all the naturally occurring isotopes of an element is called _____ mass.

What Forces Are at Work in Atoms? (p. 93)

Choose the type of force in Column B that best matches the phrase in Column A, and write the corresponding letter in the space provided.

Column A	Column B
____ **17.** counteracts the electromagnetic force so protons stay together in the nucleus	**a.** gravity
____ **18.** depends on the mass of objects and the distance between them	**b.** electromagnetic force
____ **19.** plays a key role in neutrons changing into protons and electrons in unstable atoms	**c.** strong force
____ **20.** holds the electrons around the nucleus	**d.** weak force

Review (p. 93)

Now that you've finished Section 2, review what you learned by answering the Review questions in your ScienceLog.