Name _____ Class _____ Date _____

Assessment

Atoms: The Building Blocks of Matter

Section Quiz: Counting Atoms

In the space provided, write the letter of the correct term or phrase that best completes each statement or best answers each question.

_____ **1.** The atomic number of an element is
- **a.** the mass of the element.
- **b.** 1 mol of the element.
- **c.** the number of protons in each atom of the element.
- **d.** the number of neutrons in each atom of the element.

_____ **2.** Hydrogen that is composed of atoms with two neutrons is called
- **a.** protium.
- **b.** deuterium.
- **c.** tritium.
- **d.** helium.

_____ **3.** Isotopes are atoms of the same element that have different
- **a.** masses.
- **b.** charges.
- **c.** numbers of electrons.
- **d.** atomic numbers.

_____ **4.** Mass number is
- **a.** the average atomic mass of an element.
- **b.** the total number of electrons in an atom of an element.
- **c.** the total number of protons in an atom of an element.
- **d.** the total number of protons and neutrons in an atom of an element.

_____ **5.** The isotope uranium-235 has 92 protons and 143 neutrons. Therefore, its mass number is
- **a.** 92.
- **b.** 235.
- **c.** 143.
- **d.** impossible to determine.

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_____ **6.** The nuclear symbol for uranium-235 should be written as
a. U-235. **b.** $^{235}_{92}U$. **c.** $^{235}_{143}U$. **d.** U.

_____ **7.** What is the definition of one atomic mass unit?
a. *1 g of any element*
b. *1 mol of any element*
c. $\frac{1}{12}$ *of the mass of a carbon-12 atom*
d. $\frac{1}{12}$ *of the mass of any atom*

_____ **8.** To take a weighted average of all the naturally occurring isotopes of an element in order to arrive at an average atomic mass, you would
a. multiply the mass of each isotope by the decimal fraction representing its abundance naturally, then add all these products together.
b. use the isotope with the largest mass.
c. use the isotope with the most average mass.
d. add all the masses of all of the isotopes, then divide by the number of isotopes.

_____ **9.** One mole is defined as
a. *the volume of a substance with a mass of 12 g.*
b. *the amount of a substance that contains as many particles as there are atoms in exactly 12 g of carbon-12.*
c. *the amount of a substance that contains as many particles as there are atoms in exactly 12 g of silver.*
d. *an amount of a substance that contains enough atoms to have a mass of 12 g.*

_____ **10.** The molar mass of an element is numerically equal to the element's
a. average number of electrons.
b. average number of protons.
c. average atomic mass.
d. average atomic number.

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