

Name: _____

Period: _____

Combinations of Atoms

1. Define the following terms

1. Compound -

2. Mixture

Identify each of the following as a mixture (M) or a compound (C)

3. H_2O _____

6. salt water _____

9. $NaCl$ + Water _____

4. solution _____

7. salt _____

10. air _____

5. $NaCl$ _____

8. water _____

11. Vinegar & oil _____

Complete the following Sentences

12. A water molecule is made up of two atoms of _____ and one atom of _____.

13. Table salt is made up of one ion of _____ and one ion of _____.

14. The substances in a (n) _____ can be physically separated from one another.

15. Sweetened tea is a type of mixture called a (n) _____.

16. A (n) _____ cannot be separated into its individual elements by physical means.

Each element is made of just one kind of atom. The number of protons in the atoms of an element is unique to that element. The number of protons in an atom is called the atomic number.

The mass of an atom depends on the number of its protons and neutrons. The mass number is the sum of the protons and neutrons in the nucleus. The mass of an electron is so small that it is usually omitted in mass determinations.

II. Atoms

Element	Symbol	Number of Protons	Number of Neutrons	Number of Electrons	Atomic Number	Mass Number
Oxygen	O	8		8		16
Silicon	Si	14	14			28
Aluminum	Al		14	13	13	
Iron	Fe				26	56
Calcium	Ca	20		20		
Sodium	Na				11	23
Copper	Cu	29	35	29		
Magnesium	Mg				12	24
Gold	Au	79				197
Silver	Ag		61	47		

III. Isotopes

Element	Symbol	Number of Protons	Number of Neutrons	Number of Electrons	Atomic Number	Mass Number
Hydrogen-1	H-1	1				
Hydrogen-3	H-3			1		
Boron-12	B-12				5	
Boron-11	B-11					11
Carbon-13	C-13		7			
Uranium-235	U-235			92		
Uranium-238	U-238				92	

III. Ions

Symbol	Anion or Cation	Number of Protons	Number of Neutrons	Number of Electrons	Atomic Number	Mass Number
Ca ⁺²						
Br ⁻						
As ⁻³						
Zr ⁺³						
Te ⁻²						

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