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Chemistry Unit Test- Study Guide

Ms. Gately's 8th Grade Science

1. **Define** the following words:

Atom:	Element:
Ion:	Neutral:
Molecule:	Compound:
Pure Substance:	Mixture:

2. Name two ways of **separating mixtures**: _____ & _____

3. Describe a **homogenous mixture** and provide 2 examples:
Definition:

Examples:

4. Describe a **heterogeneous mixture** and provide 2 examples:
Definition:

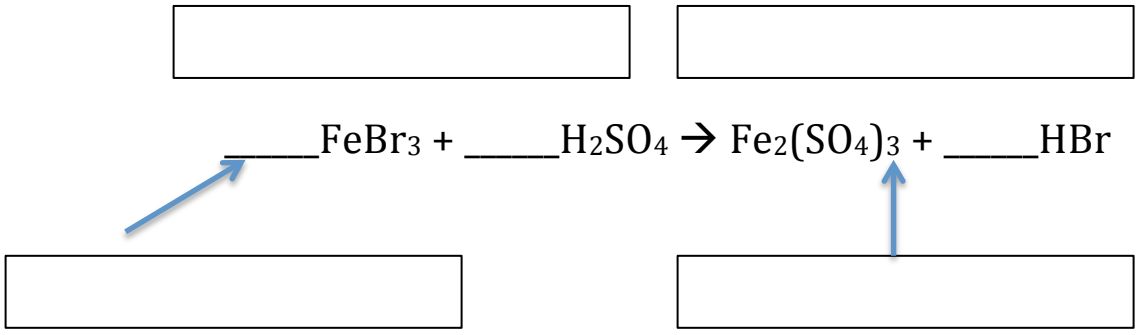
Examples:

5. In a solution of salt and water, which is the **solvent** and which is the **solute**?

Salt = _____ Water = _____

6. Balanced chemical equations (where both sides of the equation have equal numbers of atoms) are based on the **Law of Conservation of _____.**

7. Balance the following chemical equation and label the following words:
Reactants, Products, Coefficient, Subscript



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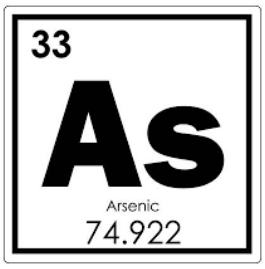
8. List how many atoms of each element are present in the molecules:

Molecular Formula	Number of Atoms
H_2O	# of Oxygen: _____ # of Hydrogen: _____ (# of elements? _____)
$C_6H_{12}O_6$	# of Carbon: _____ # of Hydrogen: _____ # of Oxygen: _____ (# of elements? _____)
$2BrO_3$	# of Bromine: _____ # of Oxygen: _____ (# of elements? _____)
$Mg(SO_4)_2$	# of Magnesium: _____ # of Sulfur: _____ # of Oxygen: _____

Periodic Table of Elements…

9. Which scientist is famous for organizing elements on the Periodic Table? _____

10. Fill in the information below for Arsenic, based on the it's periodic table square:



Atomic # = _____ # of Protons = _____ # of Electrons = _____

Atomic Mass = _____ # of Neutrons = _____

Valence Electrons = _____

11. What does the **group number** tell you about an element: _____

12. What does the **period number** tell you about an element: _____

13. How many electrons can fit in each electron shell? *(Formula = $2n^2$)*

1st shell = _____ electrons **2nd shell** = _____ electrons **3rd shell** = _____ electrons

14. Atoms want to fill their **electron shells** _____.

15. The **Group 18 or 8A elements** with full electron shells are called the _____

16. Draw a **Bohr Diagram** for each element listed:
Hydrogen: **Oxygen:** **Aluminum:**

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17. Atoms form **chemical bonds** based on **interactions between** their _____.

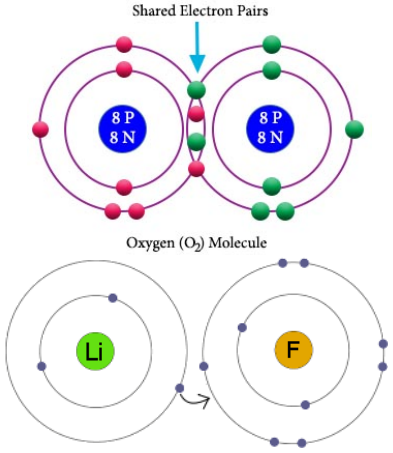
18. Normally, elements are **neutral** (0 charge) but if they become charged they are _____.

19. When elements become **positively** charged, that means that they _____ electrons. They are known as _____.

20. When elements become **negatively** charged, that means they _____ electrons. They are known as _____.

21. List the **charge** of the following atoms: p = + e = - n = 0

7 protons 6 neutrons 5 electrons	Charge: _____
4 protons 4 neutrons 8 electrons	Charge: _____
6 protons 6 neutrons 6 electrons	Charge: _____



22. Name **4 pieces of evidence that a chemical reaction** has occurred:

1)

2)

3)

4)

23. When atoms **SHARE electrons**, this means they have a _____ bond.

24. When atoms **TRANSFER electrons**, this means they have an _____ bond.

25. Use letters A, B, C & D to represent element movement in each of the **4 chemical reactions**:

Synthesis Reaction: A + B → AB	**Decomposition Reaction:**
Single-Displacement:	**Double-Displacement**:

26.	
Physical Changes: *Change in form, shape, size* List 3 examples: 1. 2. 3.	**Chemical Changes:** *Change in chemical composition* List 3 examples: 1. 2. 3.

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EXTRA CREDIT: EXTENDED CHEMISTRY MCAS VOCABULARY

Go into the Chemistry Quizlet that is posted on gatelyscience.com to fill in the definitions below!

Vocab Word:	Definition:
Activation Energy	
Inhibitor	
Catalyst	
Metallic Bond	
Crystal Lattice	
Organic Compound	
Concentration	
Solubility	
Suspension	
Colloid	
REQUIRED *Pre-fixes:* Mono- 1 Di- or bi- 2 Tri- 3 Tetra- 4 Penta- 5 Hexa- 6 Hepta- 7 Octa- 8 Nona- 9 Deca- 10	**Prefixes tell you the # of atoms.** These have been filled out for you, but you should **memorize** them! *For example…* "**Phosphorous trichloride**" means a phosphorous element attached to 3 chlorides, because tri = 3.