**Chemistry Review EOG STUDY GUIDE**

1. What are the building blocks of all matter? \_\_\_\_\_\_\_\_\_\_\_  
2. The biggest parts of an atom are in the center: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ **(+) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (o).**

**\_\_\_\_\_\_\_\_\_\_\_ (-) orbit around every atom and are what connects atoms to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**  
3. The **atomic number** tells **how many \_\_\_\_\_\_\_\_\_\_\_\_\_\_** are in the nucleus of an atom.  
4. The atomic number of elements **increases by \_\_\_\_\_ across the table from left to right**.  
**5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is equal to the number of protons and neutrons in the nucleus of an atom.

**6. The biggest atoms (beyond 92) are the most \_\_\_\_\_\_\_\_\_\_\_ and so, are often radioactive& not found in nature.**  
  
7. The periodic table is a **map of the \_\_\_\_\_\_\_\_\_\_**.  
8. The rows in the table are called **\_\_\_\_\_\_\_\_\_\_** and the columns (up & down) are called **\_\_\_\_\_\_\_\_\_\_**.

**9. Most elements are \_\_\_\_\_\_\_\_\_\_\_\_ even though life is made mostly of \_\_\_\_\_\_\_\_\_\_\_\_\_.**

**10. A small band of elements go down to the right between metals and non-metals. These elements can have both metal and non-metal properties and are known as semi-metals or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**11. Metals** are generally **shiny, dense, can be flattened (\_\_\_\_\_\_\_\_\_\_\_\_\_) can be stretched into wire (\_\_\_\_\_\_\_\_\_\_\_) and are good conductors of heat and electricity.**

**12. All but mercury (Hg) is \_\_\_\_\_\_\_\_ at room temperature.**  
**13. Non-metals**  are generally **dull, brittle, least dense and poor conductor of heat and electricity**. 14. Many non-metals are \_\_\_\_\_\_\_ at room temperature (its standard state).  
15. \_\_\_\_\_\_\_\_\_\_\_\_ make good semiconductors and have some properties of both metals and non-metals.  
  
**16. Elements which share similar properties are in the same \_\_\_\_\_\_\_\_\_\_\_.**  
17. Elements in **group 1, \_\_\_\_\_\_\_\_\_\_are the most reactive metals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a reactive member of this group but not a metal. It is also the only element without a \_\_\_\_\_\_\_\_\_\_\_\_.**

18. Elements in **group 17 are the most reactive NON-metals**. Elements in **group 17 are called \_\_\_\_\_\_\_.**

Metals in **groups 3 – 12 are called \_\_\_\_\_\_\_\_\_\_ metals** and are in the middle of the table.  
19. Elements in **\_\_\_\_\_\_\_\_\_\_, the noble gases, are very stable and do not react** with anything.

**20. Two or more different elements are connected to form \_\_\_\_\_\_\_\_\_\_\_\_\_.**  
21. The properties of compounds are \_\_\_\_\_\_\_\_\_\_\_\_\_ from the elements that combine to make them.  
22. Chemical symbols are used to represent when atoms combine to form molecules (for e**xample, H2O)**. 23. The 2 in **H2O tells us there is 2 atoms of H in this molecule and is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .** 24. If you have more than 1 molecule (for e**xample, 3 H2O) the 3 is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** .

25. If your substance is made of just one element, or one molecule (even a compound like sugar C6H12O6) you have a \_\_\_\_\_\_\_\_ substance. If you have more than one element &/or molecule swirled together like milk, brass, or ocean water, you have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

26. A mixture where the solute completely dissolves within the solvent is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  
27. When a substance changes its appearance but not its chemical formula we call this a **\_\_\_\_\_\_\_\_\_\_\_ change ...for example melting ice or breaking glass.**  
28. Substances each have their own **physical properties** that don’t change over time: **melting point, boiling point, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, density, conductivity and specific heat.**  
29. A change in the chemical composition of a substance to form a new substance is a **\_\_\_\_\_\_\_\_\_\_\_\_ change….for example spoiled milk or burning paper**.

30. Substances each have their own **chemical properties** to react with other things: **flammability, oxidation aka \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, combustability, \_\_\_\_)**.

31. You know **a chemical reaction occurs** when you have 1 or more of the following:

1. A dramatic **\_\_\_\_\_\_\_\_ change**,

2. A dramatic **\_\_\_\_\_\_\_\_ change**,

3. A **\_\_\_\_\_ is formed**,

4. A **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is formed** (a solid forms from two liquids).

32. Whatever happens during a chemical reaction, **the total amount of reactants** (\_\_\_\_\_\_\_ side) must **equal the total amount of products** (\_\_\_\_\_\_\_\_ side). This is known as the **Law of Conservation of Matter (\_\_\_\_\_\_\_)**.

33. Circle which chemical reaction does NOT follow the Law of Conservation of Matter:

Cl2 + 3KNi → 2KCl + Ni2  
  
2Na + MgF2 → 2NaF + Mg  
  
3Fe + 4H2O →Fe3O4 + 4H2

Balance the following equations:

34. H + O2 🡪 H2O

35. CO + O2 🡪 CO2

Draw a Bohr Diagram and Lewis Dot Structure for the following:

36. Sodium (Na)

37. Chlorine (Cl)

38. Nitrogren (N)