**BASIC CHEM QUIZ**

1. **Chemistry is the study of matter, what is matter?**
2. **List three (3) basic states/phases of matter.**
3. **Which of the following is a COMPOUND?**
4. **WATER C) HYDROGEN**
5. **OXYGEND) NITROGEN**

**E) None of the above are a COMPOUND**

1. **Without looking, what is the chemical symbol for SODIUM?**
2. **Which of the following is a subatomic particle of an atom and has a positive charge?**
3. **Cation C) Anion**
4. **Electron D) Neutron**

**E) Proton**

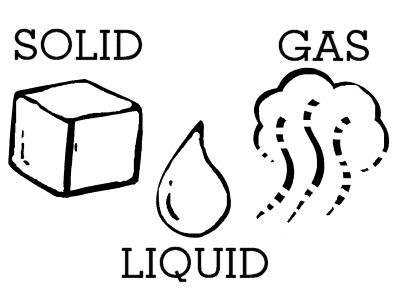
1. **What determines an atom’s atomic number . Example C#6**
2. **How many electrons it has**
3. **How many protons it has**
4. **How many neutrons it has**
5. **How many protons and neutrons combined**
6. **How many anions it has**
7. **If a Carbon (#6) atom is electrically neutral, how many electrons must it have?**
8. **Which of the following is ORGANIC?**
9. **H2O -Water C) CO2 - Carbon Dioxide**
10. **NH3 - Ammonia D) C6H12O6 - Glucose**

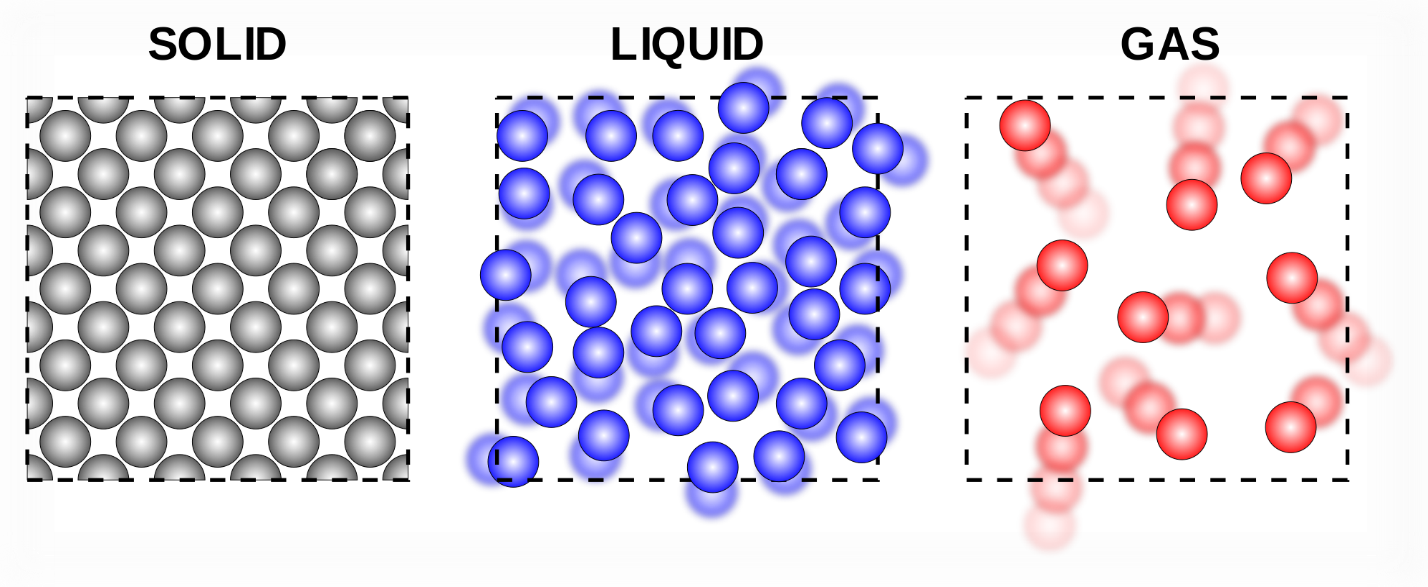
**E) None of the above are organic**

1. **What does the “Octet Rule” state?**
2. **What does a buffer do?**
3. **Which of the following best describes an IONIC compound?**
4. **When a metal joins with another metal**
5. **When a non-metal joins with another non-metal**
6. **When a metal joins with a non-metal.**
7. **Both A and B are correct**

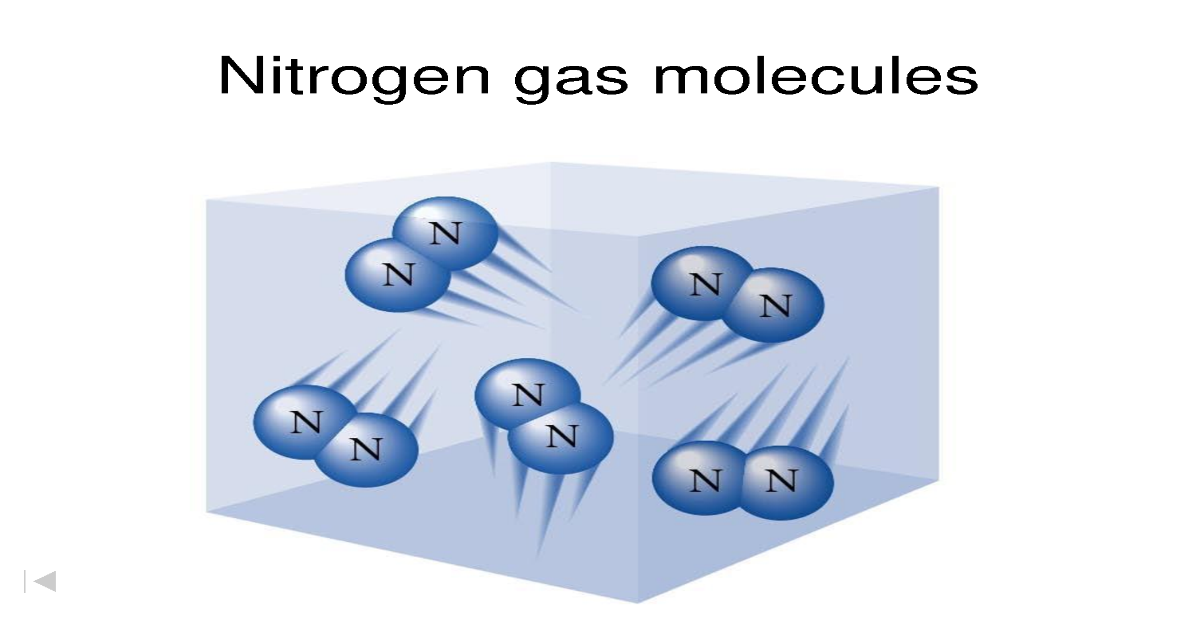
**ANSWERS:**

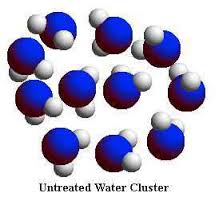
1. **Matter is anything that has mass and occupies space (volume)**
2. **Three basic states of matter are : Solid, Liquid and Gas.**

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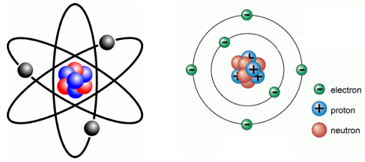
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1. **Both elements and compounds are pure substances, but elements consist of only one type of atom. Compounds consist of at least two or more different types of atoms. Example : Elements 🡪 Carbon (C), Gold (Au), Nitrogen (N2), Oxygen (O2) Compounds 🡪 Water (H2O), Carbon Dioxide (CO2).**

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1. **WATER = H2O**
2. **The symbol for Sodium is “Na” from the Latin word for sodium which is NATRIUM.**
3. **The three basic subatomic particles of an atom are : Electron (-), Proton (+) and a Neutron (neutral – no charge)**

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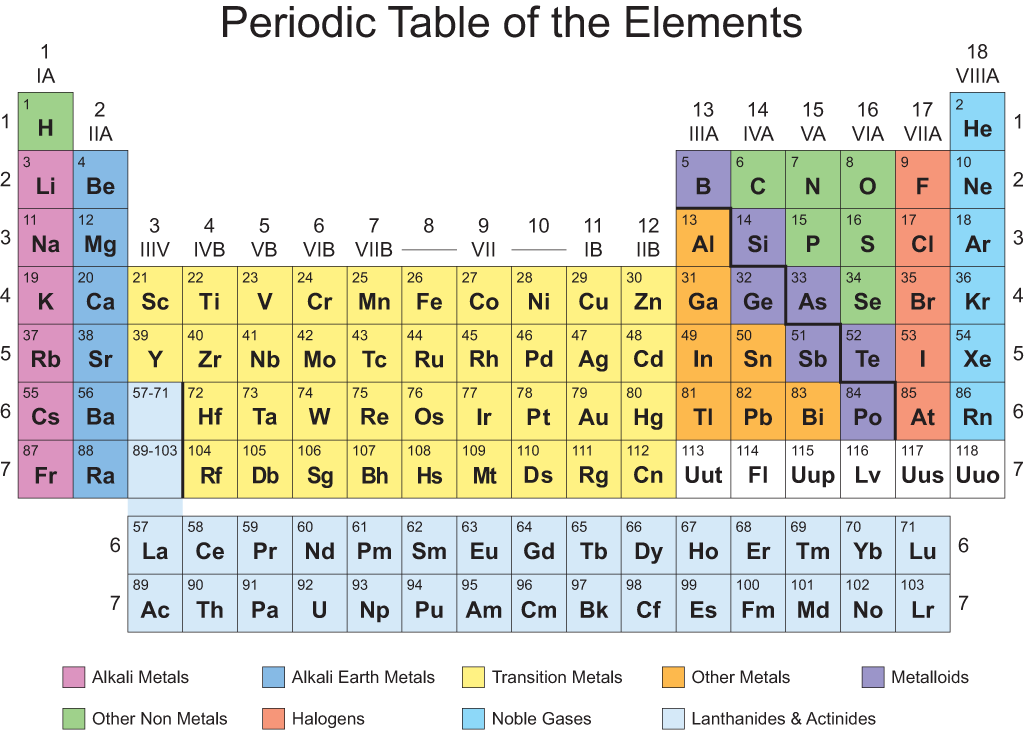
1. **PROTON**
2. **An atomic number of an atom is determined by the number of PROTONS that atom contains.**

**C)The amount of PROTONS it has**

1. **If Carbon is electrically neutral, the number of electrons must equal the number of protons. Therefore, Carbon must have 6 electrons when it is neutral.**
2. **To be organic, a molecule must possess Carbon and Hydrogen – The answer is D) – Glucose C6H12O6**
3. **The “Octet Rule” states that atoms are most stable when they possess 8 electrons in their outermost shell. Therefore some atoms will want to get rid of a couple to go back down to their stable shell, while others may want to accept a couple more to bring their electron number in their outer valence up to 8.**
4. **A buffer is a substance that helps prevent a change in the pH of a solution, neutralizes a pH change.**
5. **C – When a metal joins to a non-metal, an ionic compound has formed.**

**The difference between an ionic bond and a covalent bond is that when a metal bonds with a non-metal, the metal will donate electrons to the non-metal. When this happens the metal loses its electrons and becomes positively charged as it meets the octet rule, meanwhile the non-metal gains electrons to become negatively charged while satisfying the Octet rule. As a result the positive metal and negative non-metal are drawn together to form an ionic bond.**

**When a non-metal and another non-metal bond, each wants to gain electrons, neither wants to donate. To meet the octet rule, they end up sharing their outer valence electrons. For example. Nitrogen has 5 outer electrons, When one Nitrogen bonds with another one of the nitrogens will get a turn having three electrons from the other Nitrogen; reaching the octet rule. Then that Nitrogen will lend those 3 electrons back to the other nitrogen along with 3 electrons of its own.**

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