MC

What is the formula mass?

The weight of a single atom

\*The sum of the average atomic masses of the component atoms

The volume of a molecule

The density of a compound

MC

How do you calculate the molecular mass of a covalent substance?

\*By adding the total atomic weight of each atom in the molecule

By measuring the volume of the substance

By determining the density of the substance

By counting the number of molecules

MC
How do ionic substances differ from covalent substances in terms of formula mass?

Ionic substances have a higher density

Ionic substances do not have atomic masses

\*Ionic substances form lattice structures, not individual molecules

Ionic substances are always heavier

MC
What is Avogadro's number?

\*6.02 x 10^23

3.14 x 10^7

1.67 x 10^-24

9.81 x 10^2

MC
What does one mole of any element contain?

2.00 x 10^5 ions

1.00 x 10^6 molecules

\*6.02 x 10^23 atoms

3.00 x 10^8 particles

MC
What is the molar mass of carbon?

35.5 grams per mole

1 gram per mole

16 grams per mole

\*12 grams per mole

MC
How do you convert grams to moles?

Subtract the number of grams from the molar mass.

\*Divide the number of grams by the molar mass.

Add the number of grams to the molar mass.

Multiply the number of grams by the molar mass.

MC
What is the definition of molarity?

The number of grams of solute in one liter of solution.

\*The number of moles of solute in one liter of solution.

The number of moles of solvent in one liter of solution.

The number of liters of solute in one mole of solution.

MC
How many liters are in 355 milliliters?

\*0.355 liters

3.55 liters

0.0355 liters

35.5 liters

MC
If a soft drink contains 0.133 moles of sucrose in 0.355 liters, what is its molarity?

0.500 M

0.355 M

0.133 M

\*0.375 M

MC

What is a homogeneous mixture?

\*A mixture where the components are uniformly distributed.

A mixture that always contains water.

A mixture of only one compound.

A mixture where the components are not uniformly distributed.

MC
In a solution, what is the component present in a greater quantity called?

Diluent

\*Solvent

Solute

Concentrate

MC

What is the dilution equation?

C1 - V1 = C2 - V2

C1/V1 = C2/V2

C1 + V1 = C2 + V2

\*C1V1 = C2V2

MC
What happens to the concentration of a solution when more solvent is added?

\*It decreases.

It doubles.

It increases.

It remains the same.

MC
What is the concentration of a solution?

The amount of solvent in a solution.

\*The amount of solute in a solution.

The total volume of the solution.

The temperature of the solution.

MC
Why is it important to balance chemical equations?

To increase the reaction rate

To ensure the same number of each type of molecule on both sides

\*To ensure the same number of each type of atom on both sides

To make the equation look neat

MC

What does the arrow in a chemical equation represent?

The state of the reactants

\*The direction of the reaction

The number of molecules

The type of reaction

MC
In the equation CH4 + O2 → CO2 + H2O, what are the reactants?

\*CH4 and O2

CO2 and H2O

CH4 and CO2

O2 and H2O

MC
Why might fractional coefficients be used as an intermediate step in balancing equations?

To increase the number of reactants

\*To simplify the process

To make the equation more complex

To change the subscripts

MC
What should you do if a balanced equation is not in its simplest form?

Multiply the coefficients by a common factor

Change the subscripts

\*Divide the coefficients by their greatest common factor

Add more reactants

MC
What does the (aq) symbol indicate in a chemical equation?

Gas state

Liquid state

Solid state

\*Aqueous solution

MC
What is the Law of Conservation of Matter?

Matter cannot be created or destroyed in chemical reactions

\*Matter can be created or destroyed in chemical reactions

Matter can change its state in chemical reactions

Matter can be converted into energy

MC
What happens if you change the subscript in a chemical formula while balancing an equation?

\*It changes the molecule

It balances the equation

It simplifies the equation

It increases the reaction rate

MC
What does the (s) symbol indicate in a chemical equation?

Gas state

Liquid state

Aqueous solution

\*Solid state

MC
In the equation 2H2O → 2H2 + O2, what is the coefficient of O2?

4

2

\*1

3

MC

In an acid-base reaction, what is transferred from one chemical species to another?

Neutron

\*Hydrogen ion

Helium

Electron

MC
What ion is produced when hydrochloric acid (HCl) is dissolved in water?

Hydroxide ion (OH-)

Chlorine ion (Cl-)

Sodium ion (Na+)

\*Hydronium ion (H3O+)

MC
In a neutralization reaction, what are the products when an acid reacts with a base?

Water and hydrogen

Salt and gas

Gas and water

\*Salt and water

MC
What is the oxidation number of a neutral atom?

+1

+2

\*0

-1

MC

In an oxidation-reduction reaction, what does the reducing agent do?

\*Loses electrons

Remains unchanged

Gains electrons

Forms a precipitate

MC

Which of the following statements is true about oxidation?

It does not change the oxidation state

It involves a gain of electrons

\*It involves a loss of electrons

It always produces a gas

MC
In a precipitation reaction, what happens when the concentration of a substance exceeds its solubility?

\*It precipitates out

It remains unchanged

It dissolves further

It forms a gas

MC

What is the sum of the oxidation numbers in a neutral molecule?

Equal to the charge of the molecule

Always negative

\*Always zero

Always positive

MC
Which type of reaction involves the transfer of electrons between atoms and molecules?

Combustion

\*Oxidation-Reduction

Acid-Base

Precipitation