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LANGUAGE OF CHEMISTRY

SUBJECT-CHEMISTRY

CHAPTER NO- 5

Balancing a chemical equation

PERIOD-4

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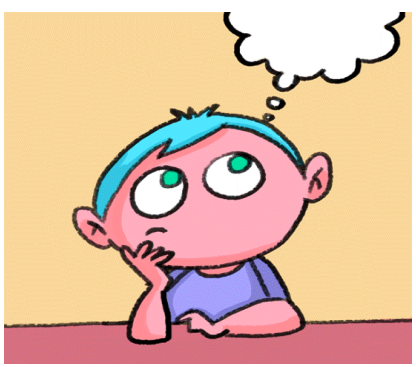
LEARNING OBJECTIVE

Students will be able

- Familiarize with the concept of skeletal equation and balanced chemical equations.
- Sensitize the ways to balance a chemical equation.



SKELETAL EQUATION

- The equations in which the number of atoms on the left side is not equal to the number of atoms in the right are known as SKELETAL EQUATIONS.
- For Example, $H_2 + O_2$----------→ H_2O
- $Mg + O_2$ ----------→ MgO
- $N_2 + H_2$----------→ NH_3

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BALANCED CHEMICAL EQUATION

- The equation in which the number of atoms in the reactant side is equal to the number atoms in the product is known as BALANCED CHEMICAL EQUATION
- For Example, $H_2 + Cl_2$————————$2HCl$

HOW TO BALANCE A CHEMICAL REACTION

- Consider the reaction between Magnesium and Oxygen to produce Magnesium Oxide
- The Skeletal is Equation is as follows: -
- $Mg + O_2$————————→ MgO

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Let's Balance this Equation by *Trial-and-Error Method*

- Step-1: Count the number of atoms of each element on either side. It is convenient to start balancing with the molecule that contains the maximum number of atoms

Number of atoms of each element on the	
REACTANT SIDE	PRODUCT SIDE
Mg= 1 O=2	Mg =1 O =1

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Let's Balance this Equation by *Trial-and-Error Method*

- Step-2: Multiply the product side by 2 because there are two atoms of the oxygen on the reactant side.

Number of atoms of each element on the	
REACTANT SIDE	PRODUCT SIDE
Mg= 1 O=2	Mg =1 X2 =2 O =1 X2 =2

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Let's Balance this Equation by *Trial-and-Error Method*

- Step-3: Multiply the magnesium atom on the left side with 2
- 2 Mg + O2 ——————→2 MgO

Number of atoms of each element on the	
REACTANT SIDE	PRODUCT SIDE
Mg= 1 X2 =2 O=2	Mg =1 O =1

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HOME ASSIGNMENT

- Exercise-Q5 & Q6
- All Objective type Questions.
- Balance the equation:-

a) $H_2 + O_2 \longrightarrow H_2O$

b) $FeS + HCl \longrightarrow FeCl_2 + H_2S$

c) $KClO_3 \longrightarrow KCl + O_2$

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THANKING YOU

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