



CHEMICAL REACTIONS

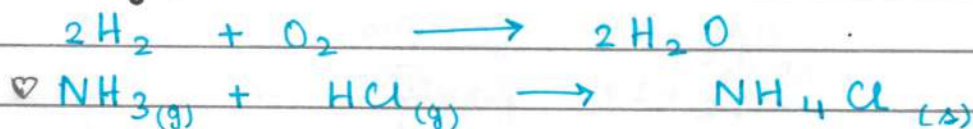
CHEMICAL REACTIONS:

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→ The transformation of a chemical substance into a new chemical substance by making and breaking bonds between different atoms.

→ OBSERVATIONS:

1. Change in State:



2. Change in Colour:



3. Change in Temperature:



N	2	2
H	8	10
S	1	1
O	4	4

4. Evolution of Gas:



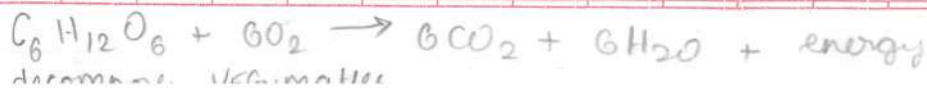
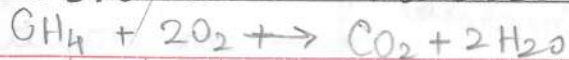
5. Formation of Precipitate:



→ HEAT

Endothermic = absorbs heat

Exothermic = release heat



Chemical Equation

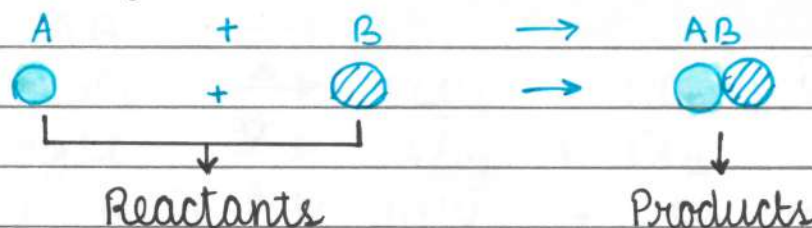
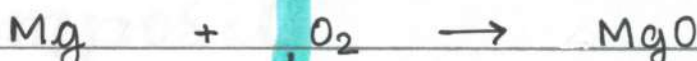
Word Equation

Skeletal Equation

Balanced

when magnesium ribbon is burnt in oxygen it gets converted into magnesium oxide

Magnesium + Oxygen \rightarrow Magnesium Oxide

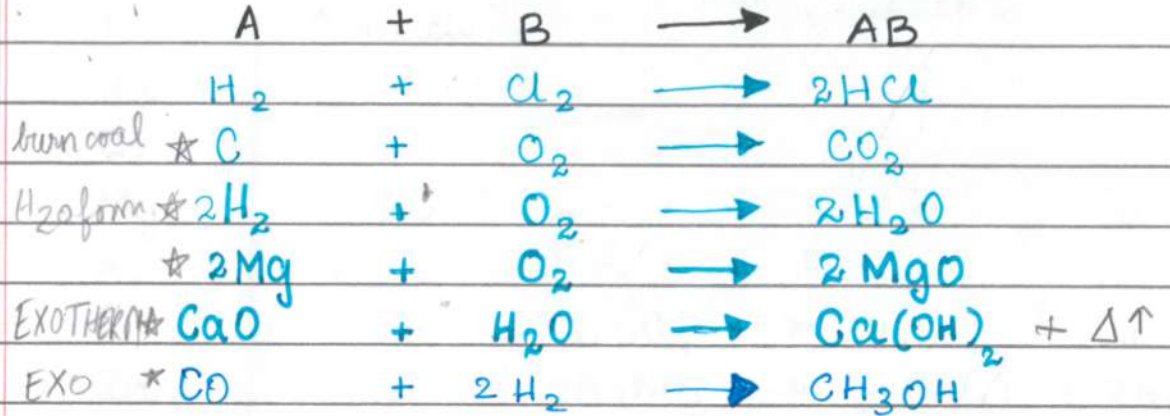


Balancing

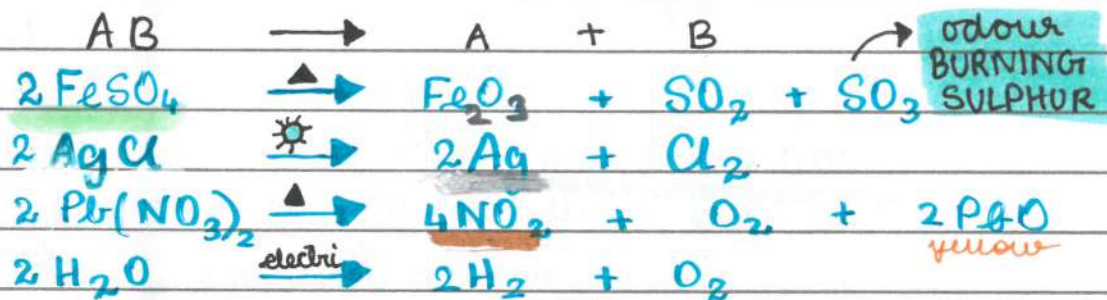
- ▶ "Law of Conservation of Mass"
mass can neither be created nor destroyed in a chemical reaction.
- ▶ never change subscripts
- ▶ no. of atoms in reactants = products
- ▶ elements with maximum atoms balanced 1st
- ▶ physical state \Rightarrow gas (g), liquid (l), solid (s)
condition on \rightarrow

TYPES

Combination

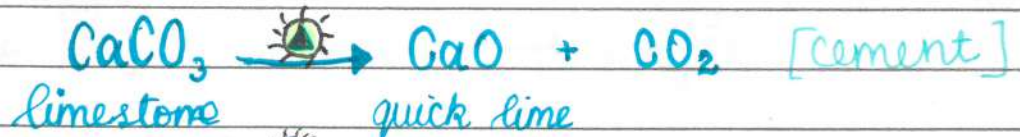


Decomposition

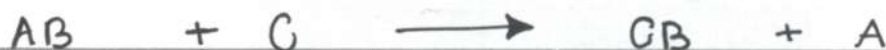


Decomposition

- thermal
- photochemical = $h\nu = "h\nu"$
- electrolytic



Displacement

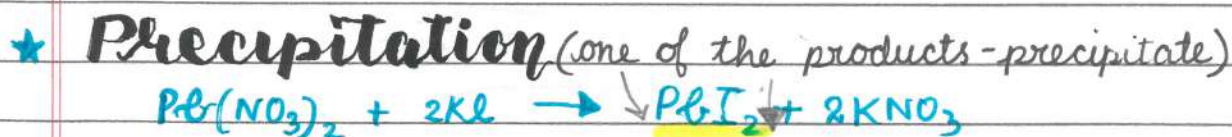
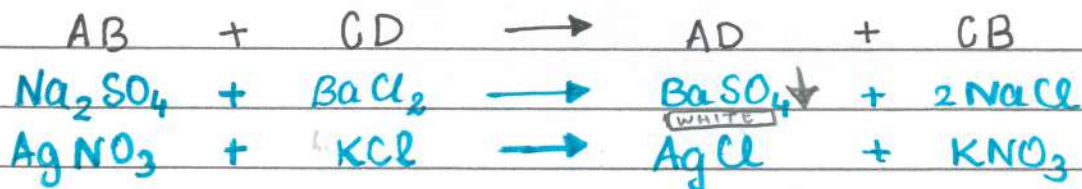


K	↑ reactive	
Na		
Ca		
Mg	♡	$Pb + CuCl_2 \longrightarrow PbCl_2 + Cu$
Al	♡	$Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$
C		$Zn + CuSO_4 \longrightarrow ZnSO_4 + Cu$
Zn		$Cu + 2AgNO_3 \longrightarrow Cu(NO_3)_2 + 2Ag$
Fe		$C + FeO \longrightarrow CO + Fe$
Sn		$H_2 + MgCl_2 \longrightarrow \text{no reaction}$
Pb		$Fe + CuCl_2 \longrightarrow FeCl_2 + Cu$
H		
Cu		
Ag		
Au		
Pt	↓ reactive	

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Double Displacement

cations(+) & anions(-) switch places



★ **Neutralization**



Redox Reaction

Oxidation

LEO - loss of e^- add O_2

reduce H

Reduction

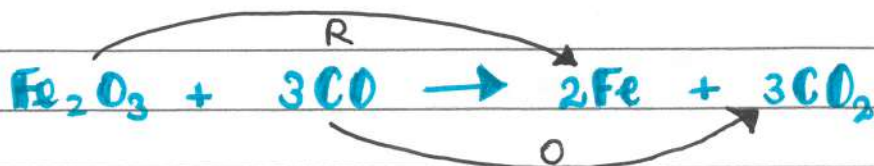
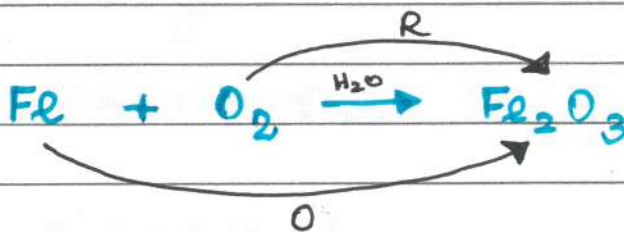
GER - gain of e^- reduce O_2

add H



Reducing agent \rightarrow does reduction by oxidising itself

Oxidising agent \rightarrow does oxidation by reducing itself



EFFECTS

▶ Corrosion galvanising (zn)

→ natural process that causes the transformation of pure metals to undesirable substances when they react with substances water or air.

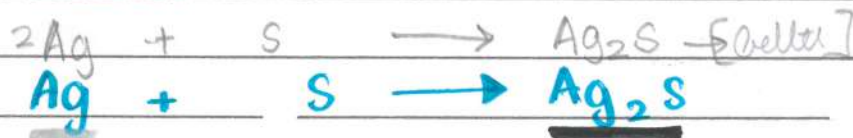
→ Iron - Rusting



→ Copper



→ Silver



▶ Rancidity antioxidants, N₂, air tight box

oil / fats $\xrightarrow{\text{OXIDISED}}$ rancid (smell & taste x)

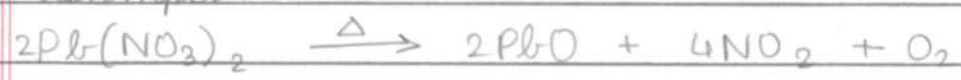
N₂ used - ↓ reactive

Equations - Must know

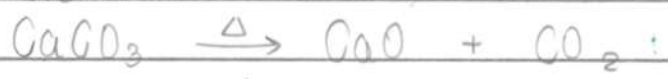
→ combination



→ decomposition



→ thermal



→ photochemical

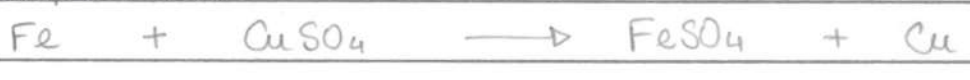


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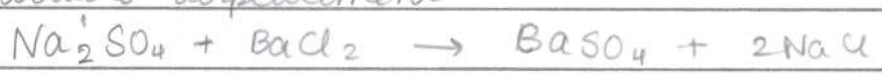
→ electrolysis



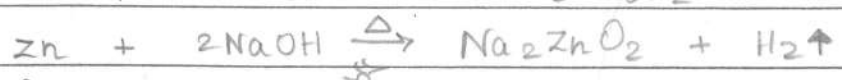
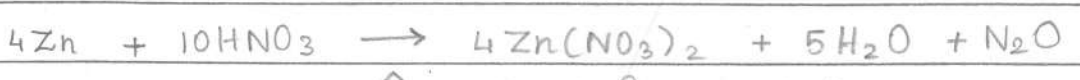
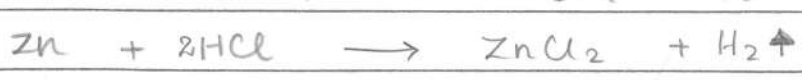
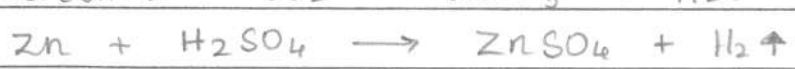
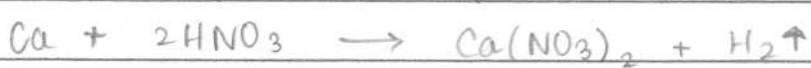
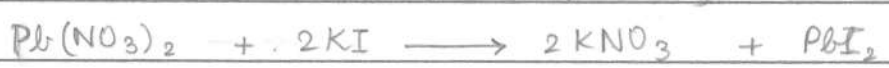
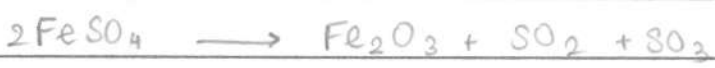
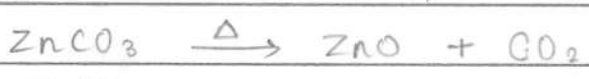
→ displacement



→ double displacement



→ neutralisation



Respiration

