

RADIANT

2026

Chemistry

Chemical Changes and
Reactions

Lecture - 02

By- Bharti Ma'am

Physics Wallah

Topics *to be covered*

1

Decomposition Reaction

- Thermal decompo
- Electrolytic decompo
- Photolytic deco

2

Displacement Reaction

3

Double Displacement Rxn

4

.....



Quick-Revision



1.) Combination Reaction $A + B \longrightarrow AB$

2.) Decomposition Reaction





Decomposition Reaction

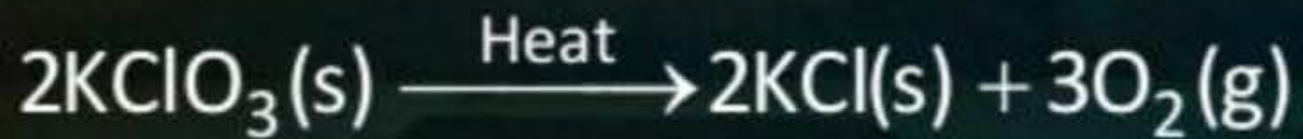
→ (Heat)

Break down of a Reactant

two OR more products

Thermal Decomposition:

The chemical reaction in which a single substance break up into two or more simple substances by heat is called thermal decomposition.



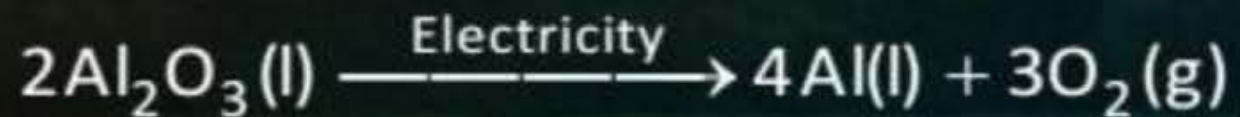


Decomposition Reaction



Electrolytic Decomposition or Electrolysis :

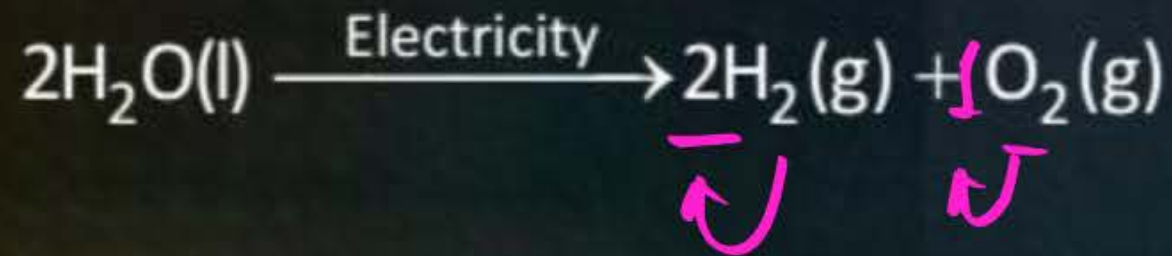
This reaction involves the decomposition of substance when electricity is used.





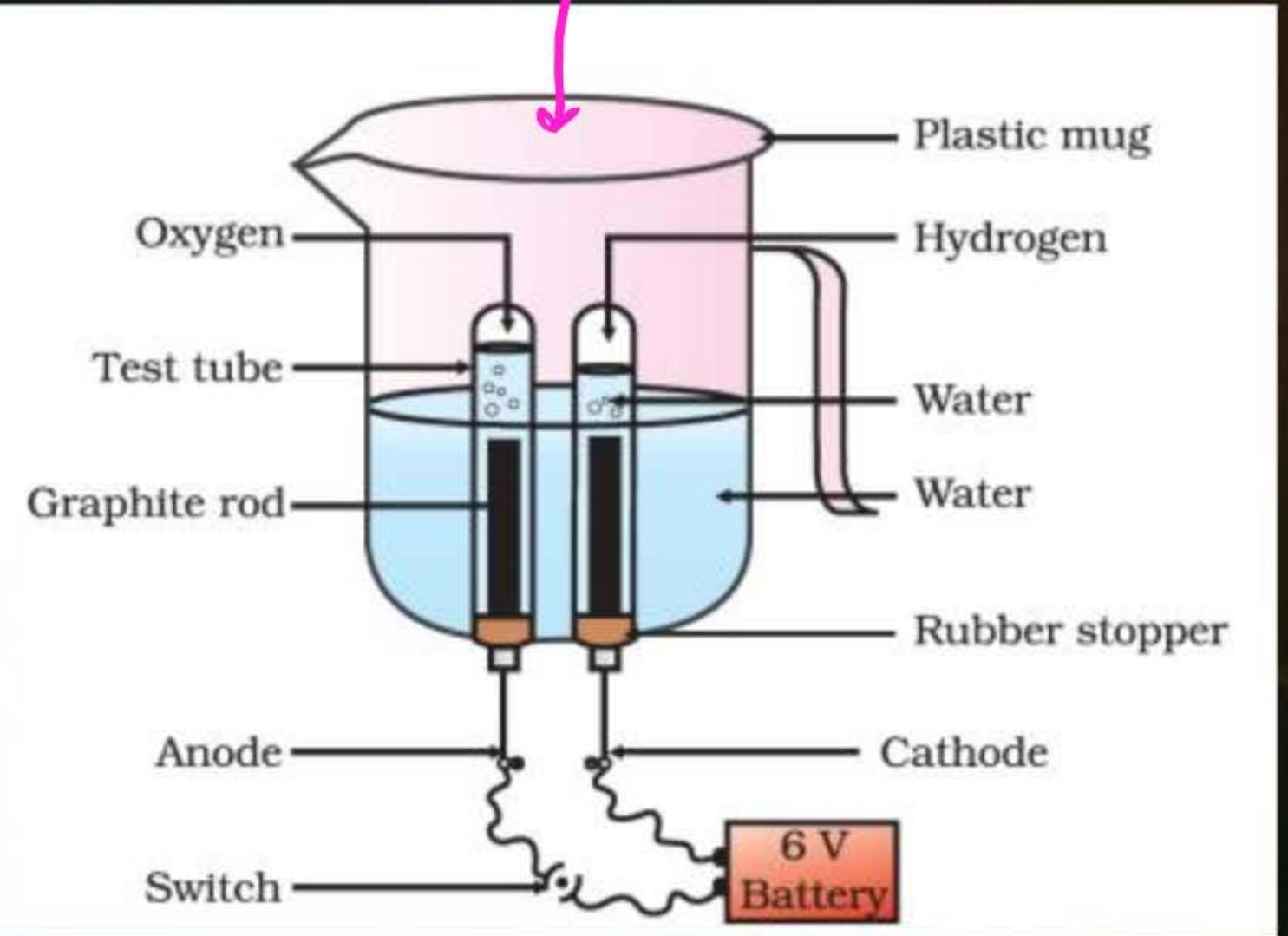


Decomposition Reaction



*Que In what volume H₂ and O₂ gas releases? **

Solⁿ: → 2:1 by vol^m





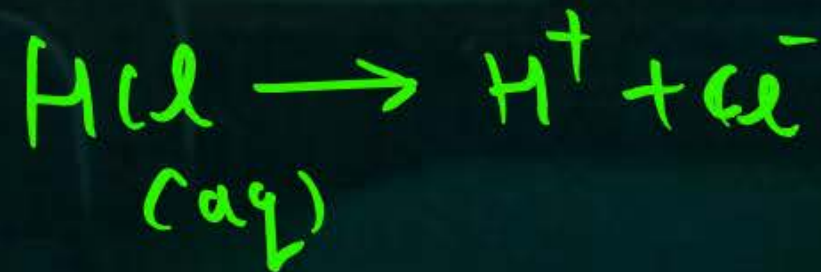
Q2:- why we add few drops of HCl (Acid) during Electrolytic decomposition of water?

Conduction \rightarrow free ions
 \rightarrow free e^-

Ans:-

Pure water \rightarrow Bad conductor of Electric current

Acid form free ion in water $(H_2O + HCl)$



\downarrow
'good conductor'



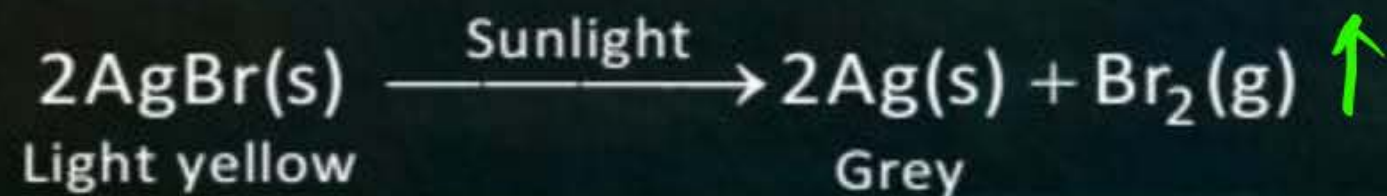
Decomposition Reaction



Photo-decomposition or Photolysis :

The decomposition reaction which happens because of light (sunlight), is called photolysis or photo-decomposition reaction.

a) Decomposition of silver bromine:





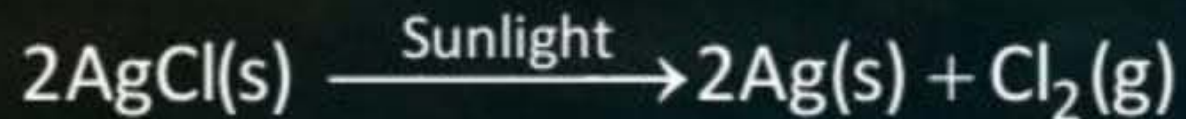
Decomposition Reaction



Photo-decomposition or Photolysis :

The decomposition reaction which happens because of light (sunlight), is called photolysis or photo-decomposition reaction.

b) Decomposition of hydrogen peroxide: $H_2O_2 \xrightarrow{\text{Sunlight}} H_2O + O_2 \uparrow$



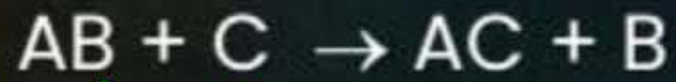
(Hydrogen peroxide)



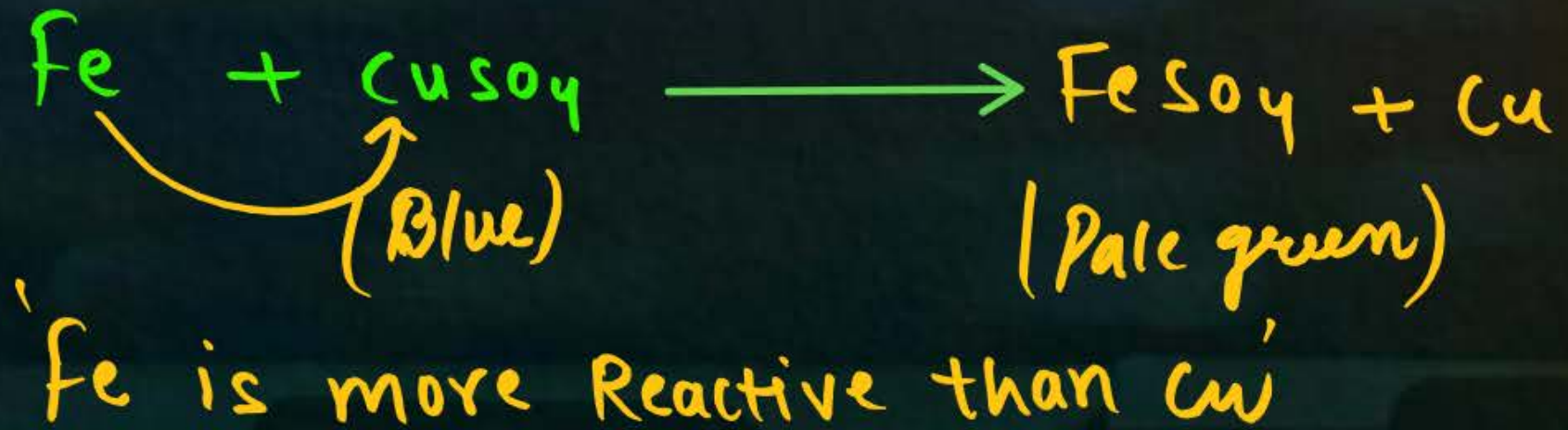
Displacement



It is a chemical change in which a more active element displaces a less active element from its salt solution.

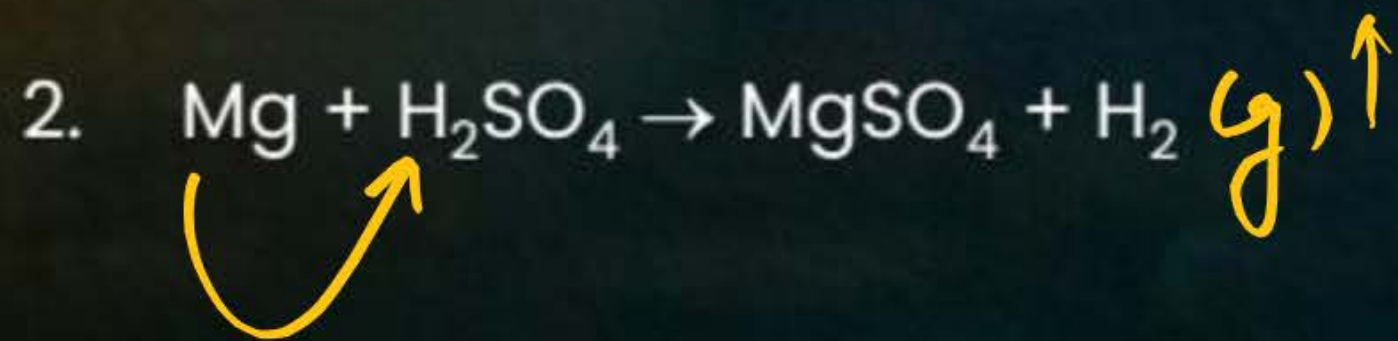
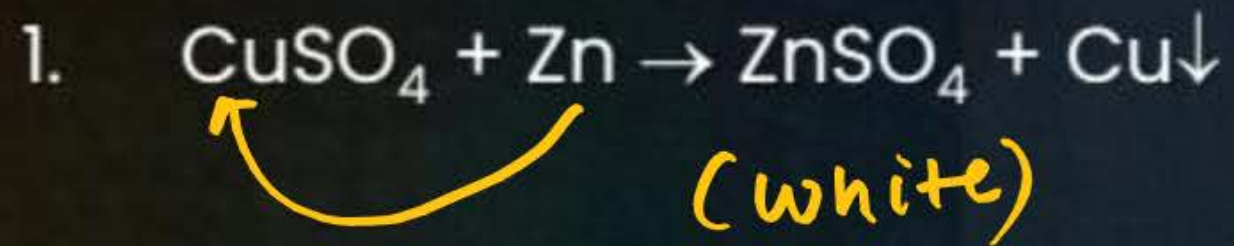


More reactive
Salt of less reactive





Displacement



Zn is more reactive than Cu

Mg is more active, than Hydrogen



Displacement

v.v.v.gmp



Active element

Less reactive

Metals			Non-metals	
Potassium	K	Reactivity decreases downwards	Most active metal	
Sodium	Na		Fluorine F Most active Chlorine Cl Bromine Br Iodine I Least active	
Calcium	Ca			
Magnesium	Mg ✓			
Aluminium	Al ✓			
Zinc	Zn ✓			
Iron	Fe ✓			
Lead	Pb ✓			
[Hydrogen]	[H]		Least active metal	
Copper	Cu			
Mercury	Hg			
Silver	Ag			
Gold	Au			
Platinum	Pt			

Note: The more reactive element displaces the less reactive element from its salt solution.



Reactivity Series

Most reactive

Plz
 Stop
 Calling
 Me
 A
 Zebra
 I

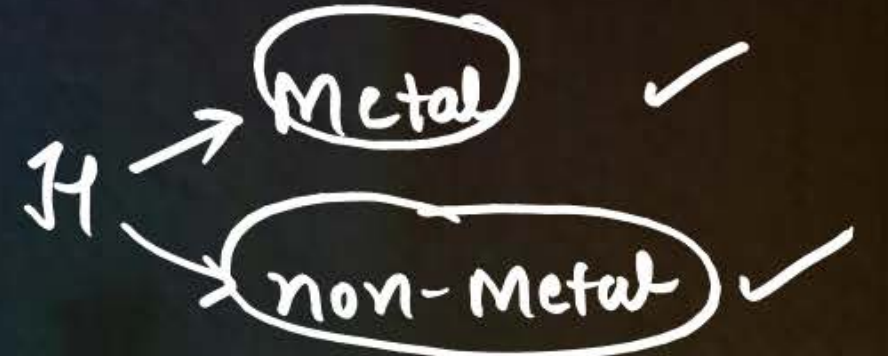
K
 Na
 Ca
 Mg
 Al
 Zn
 Fe

like
Her
 C
 H
 A
 A
 P

Pb
 Hydrogen
 Cu
 Hg
 Ag
 Au
 Pt



least reactive



Reduction pot. → Hydro → zero
 12th
 Ref.



Double decomposition

'Mutual Exchange of Ions'



{ This is a type of chemical change in which two compounds in a solution react to form two new compounds by mutual exchange of radicals. Double decomposition reaction is also called double displacement reaction.



Double decomposition

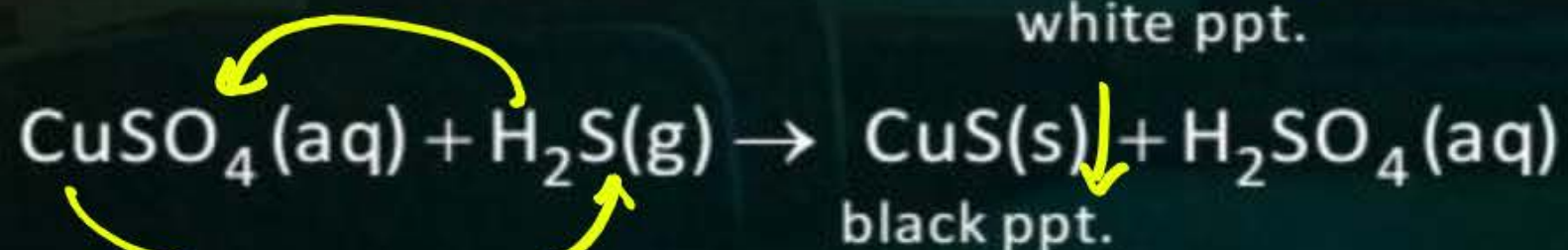
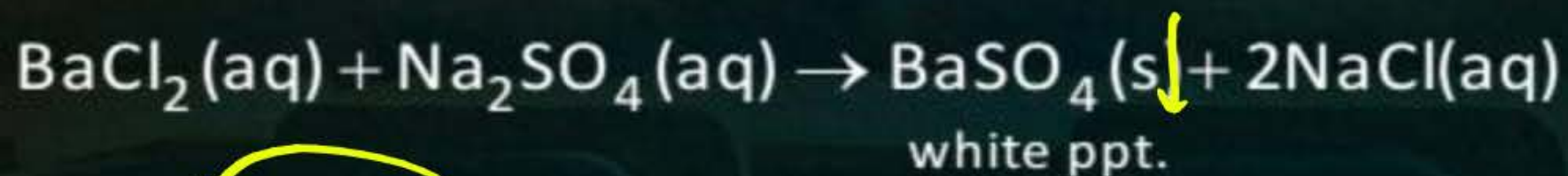


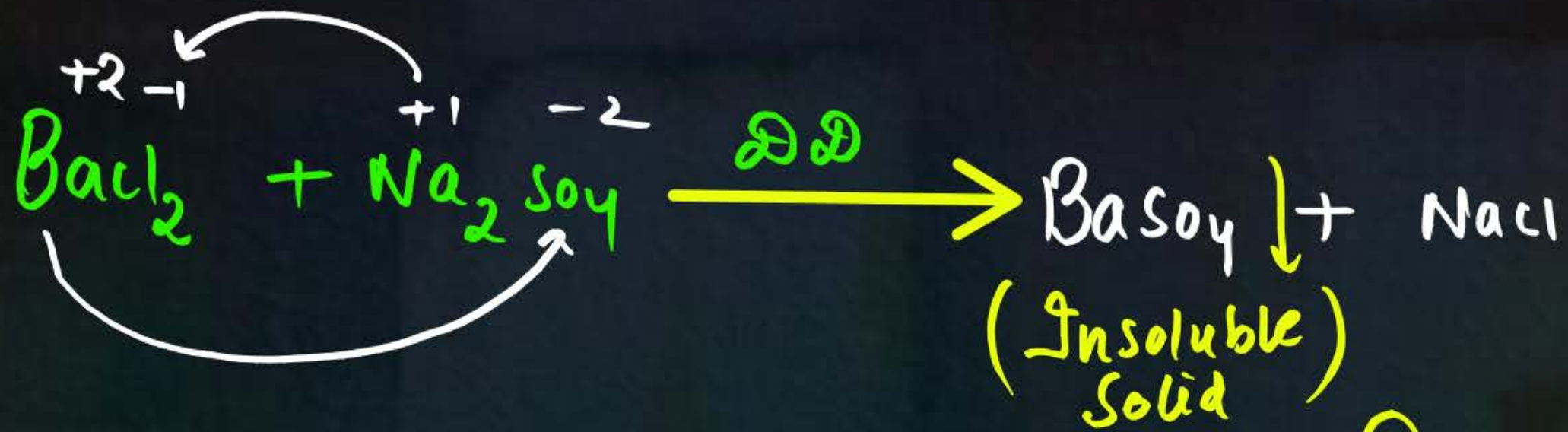
→ Insoluble solid mass

g) Precipitation reaction:

A chemical reaction in which two compounds in their aqueous state react to form an insoluble salt (a precipitate) as one of the products is known as a precipitation reaction.

Example:





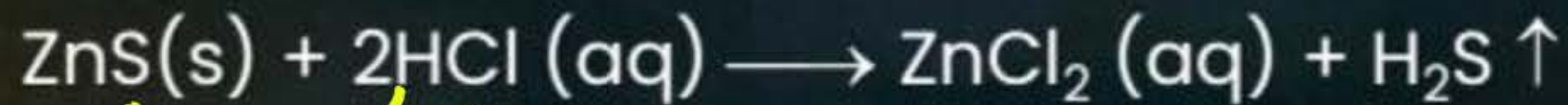
Double Displacement
Reaction



Double decomposition



Example:





Double decomposition



(b) Neutralization

The reaction between an acid and a base that forms salt and water only is referred to as a reaction of neutralisation.

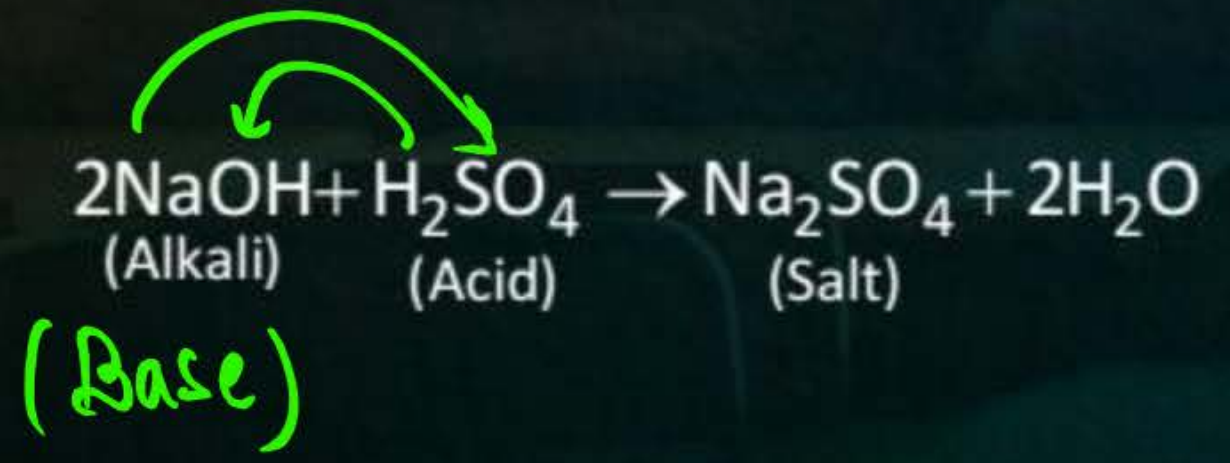
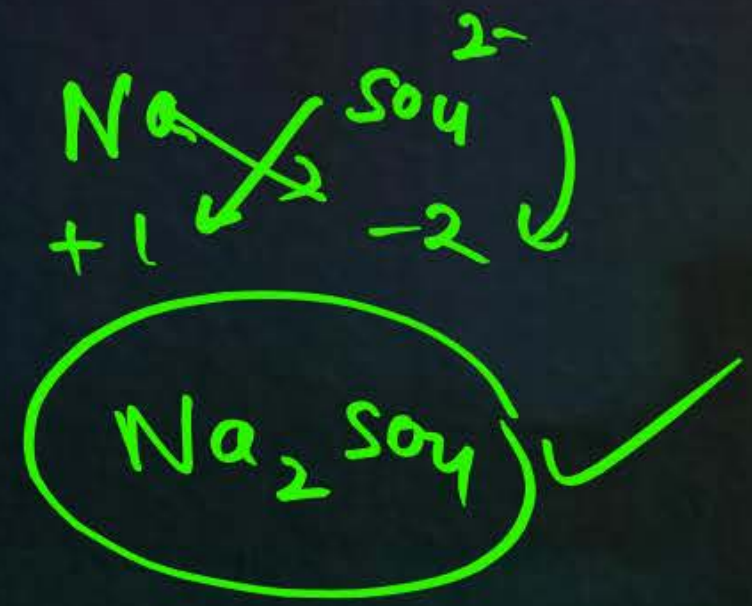
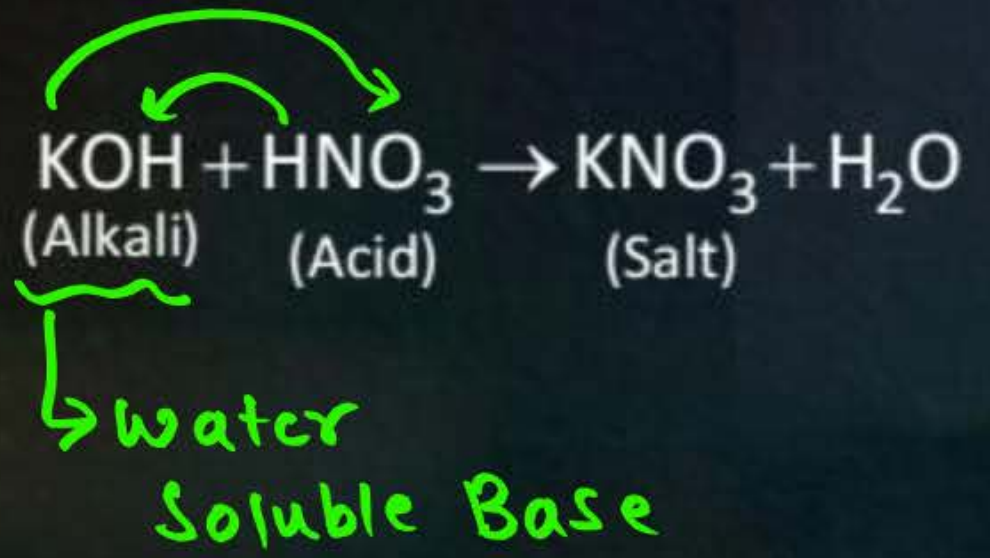


OR





Neutralisation of a soluble base (alkali) with acid

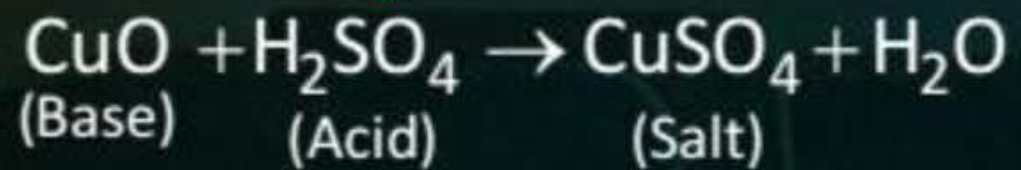


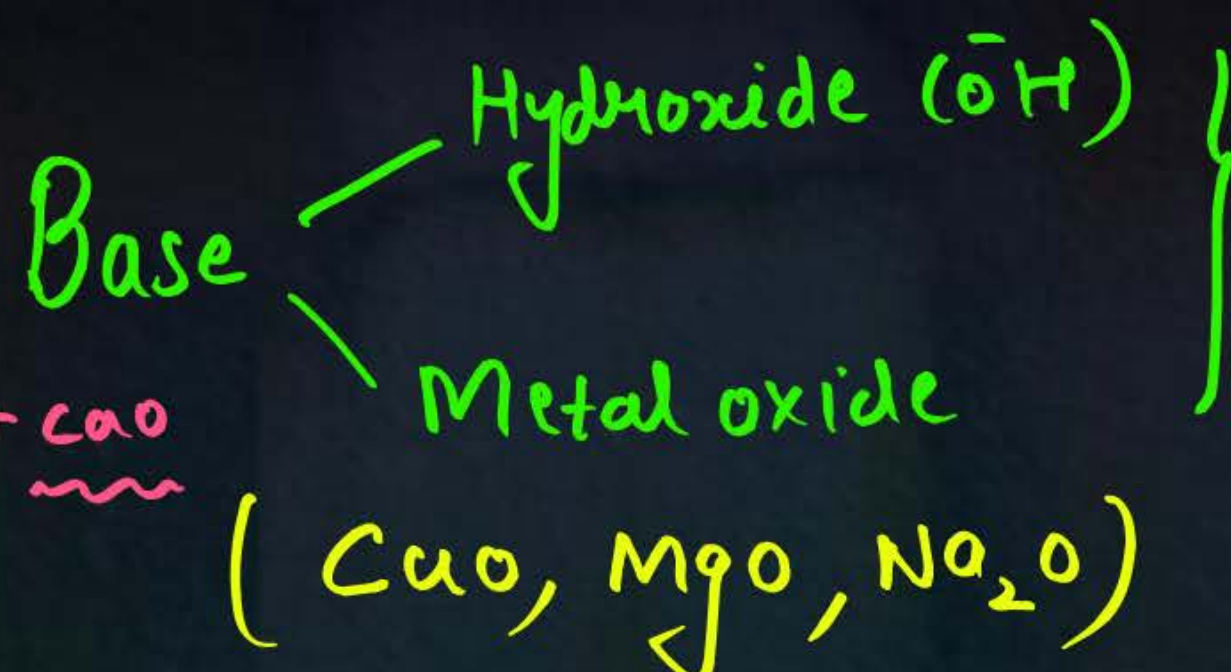


Neutralisation of a soluble base (alkali) with acid



Metal oxide = Base



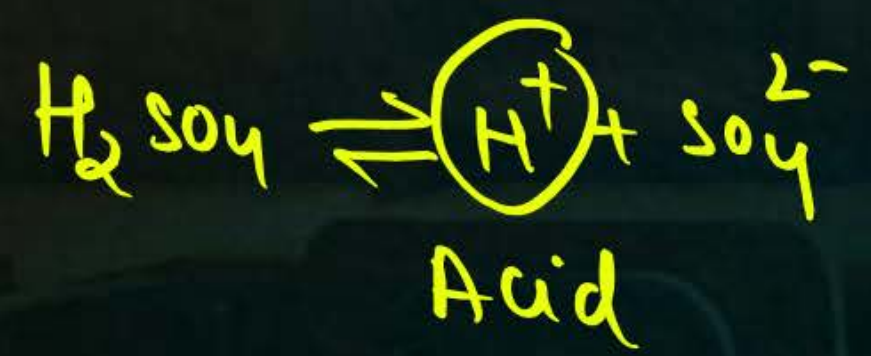
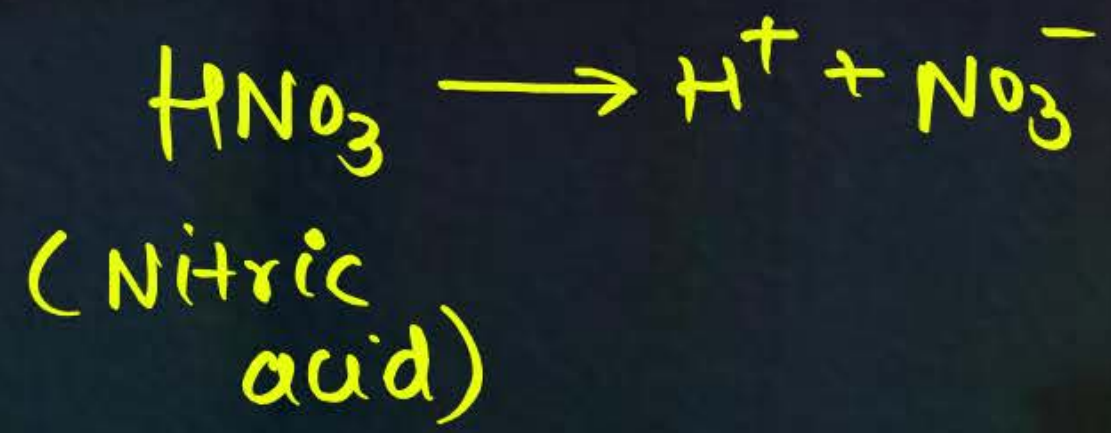
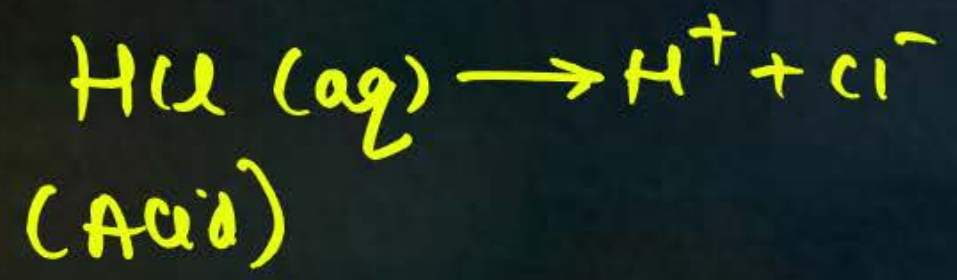


- NaOH
 Mg(OH)₂
 Ca(OH)₂
 KOH
 Cu(OH)₂
 Fe(OH)₃
- All are
 Base

Alkali

↳ water soluble Base
 eg: → NaOH, Mg(OH)₂
 KOH

Acid (H^+ ions)





Homework



Revision ✓

Notes Comp. ✓

16th ✓✓



BHARTI MAAM

JOIN MY OFFICIAL TELEGRAM CHANNEL



Physics Wallah



A white rectangular graphic containing a QR code and a small circular profile picture of the woman. Below the QR code is the Telegram handle '@CHEMISTRYBYBHARTIMAAM'.

@CHEMISTRYBYBHARTIMAAM



Thank You