

UPDAAN



2025

Bharat Mata Ki Jai

ACIDS, BASES AND SALTS

✓ **Salts and Their Types – Part I**

CHEMISTRY

Lecture – 06

BY: SUNIL BHAIIYA



Topics

to be covered

- 1 Importance of pH in Daily Life (Contd.)
- 2 Salts and Their Types – On Basis of pH





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Knowledge Ride On



Importance of pH in Daily Life
(Contd.)

Knowledge Ride On



Salts and Their Types – On Basis of pH

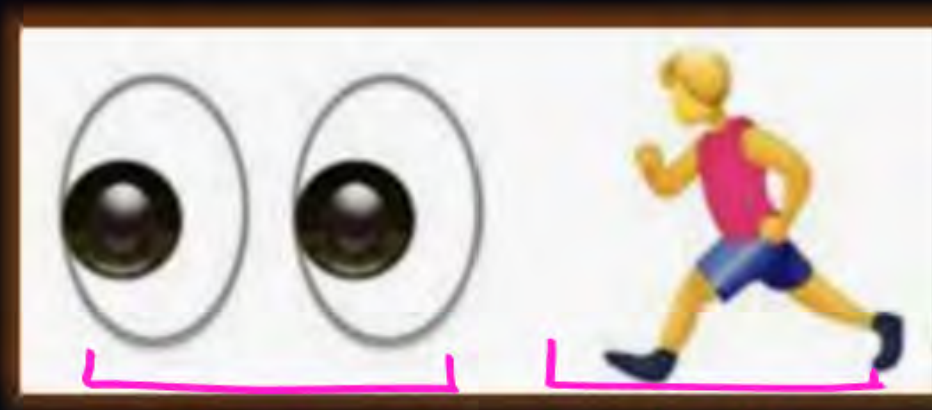
Knowledge Ride On



Insaniyat Ka Gyaan ✓



Can you decode the below puzzle?



eye

run

= Iron (Fe)

RIDDLE WALLAH



Can you decode the below puzzle?



= Iron (Fe)

Pyaare Bacche Be Like



Concept Polish (गृहकार्य) – Homework Discussion



Give a Thought



A farmer wants to grow sugarcane on his field and has treated the soil of his fields with quicklime, slaked lime or chalk. Under what conditions of the soil he has done it?

- A. Acidic
- B. Basic

(i) Sugarcane \longrightarrow Neutral pH of soil

(ii) Soil is treated with: CaO , Ca(OH)_2 , CaCO_3

\Downarrow
Basic

(iii) pH of soil has become acidic & to grow sugarcane it must be neutral. Hence, it is neutralised by basic substances.

Question



Search and answer. (Not from exam point-of-view)

✓ (a) Can an antacid contains an acid? \Rightarrow Effervescent Antacid \rightarrow ASA

Hint: Search the components present in effervescent antacids.

helps to relief pain \leftarrow Aspirin

✓ (b) Is it good to treat a wasp sting with a basic substance?

(a) YES

(b) NO

'alkaline'
or
'basic'

Treated with vinegar or
lemon juice

Sodium
bicarbonate

Anhydrous
citric acid

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Samaj rahe ho

Importance of pH in Everyday Life (Contd.)



Acid Rain

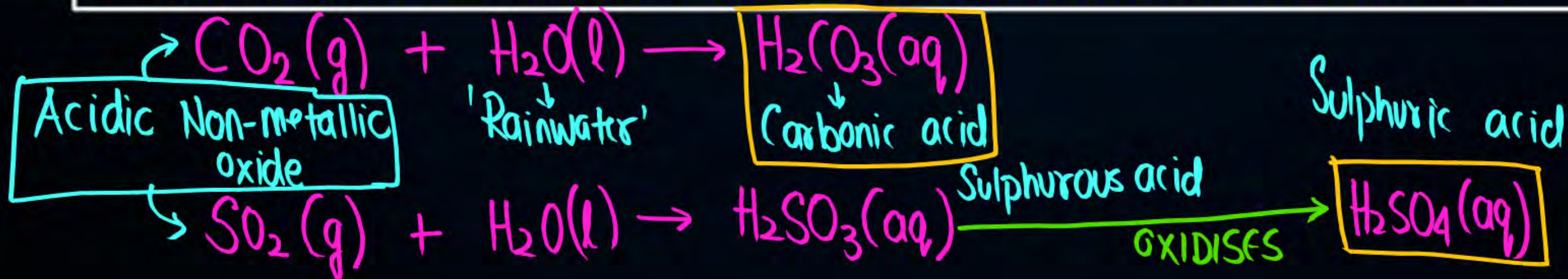
(अम्ल वर्षा)



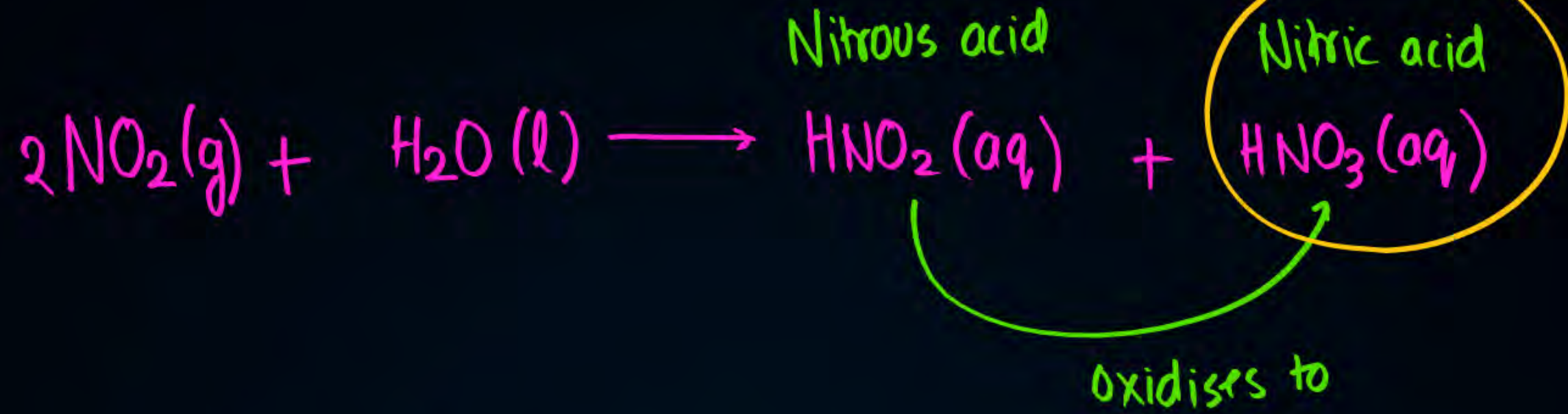
(unwanted & harmful substances)

When the atmospheric pollutants like sulphur dioxide, nitrogen dioxide and carbon dioxide are dissolved in rainwater, they form acids such as sulphuric acid, nitric acid and carbonic acid. This lowers down the pH of rainwater and if it falls below 5.6, it is termed as acid rain.

Acid rain makes the survival of aquatic life difficult by lowering the pH of river water, promotes rusting of iron, corrodes marble buildings, decrease soil fertility by killing nutrients like potassium and calcium etc.



(Just for
knowledge)



acids formed in acid rain are:

- ① Carbonic acid (H_2CO_3)
 - ② Sulphuric acid (H_2SO_4)
 - ③ Nitric acid (HNO_3)
- main pH drop is because of this!

Curdling of Milk

(दही जमाना)



Milk contains two proteins:

Whey

Casein

① Warm the milk
to kill any germs

② Cool it so that it is
moderately hot

③ Put 1-day old
curd.

Lactobacillus bacteria
↓
'Lactic acid'

Acidic Medium

Fragile Solid
(Curd)



pH Shifting of Fresh Milk by Milkman



Fresh /Raw Milk

Lactic Acid Forming Bacteria (LAB)

Acidic Character Increases

Souring of Milk

To decrease souring of milk, milkman adds baking soda (basic in nature).

↳ neutralise acid formed by L.A.B.

This milk takes time to set as curd because lactic acid will first neutralise baking soda and then curdling will start.

- Natural sweet taste and smell of milk turns to SOUR TASTE AND SOUR SMELL
- Colour turns from white to LIGHT YELLOW.

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Salts and Their Types – On Basis of pH

Be Serious!

Salt

(लवण)

(ऑक्सिड)

(आनायन)

Salts are ionic compounds that contain a positively charged ion (cation) usually a metal ion except NH_4^+ and negatively charged ion (anion), i.e. a non-metal ion.

non-metallic cation

(अनायन)

अधातु

Salt	Formula	Positive ion	Negative ion
Sodium chloride	NaCl	Na^+	Cl^-
Magnesium chloride	MgCl_2	Mg^{2+}	2Cl^-
Potassium nitrate	KNO_3	K^+	NO_3^-
Sodium carbonate	Na_2CO_3	2Na^+	CO_3^{2-}
Ammonium chloride	NH_4Cl	NH_4^+	Cl^-



True or False



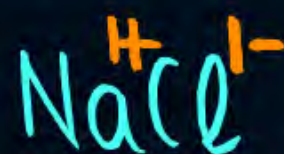
Are salts electrically neutral?!

- ☒ A. True
☐ B. False

no overall electrical charge

no imbalance of charge

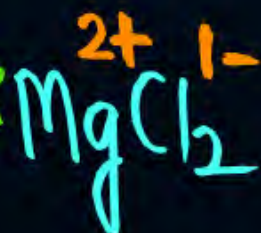
Magnitude of +ve charge on cation = magnitude of -ve charge on anion



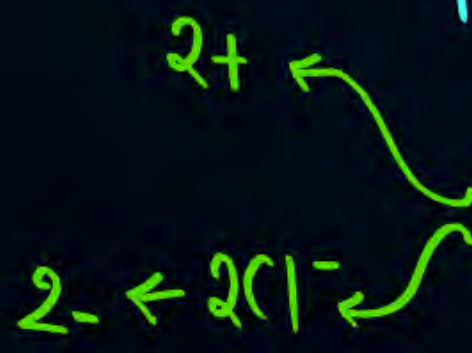
Overall electrical charge
1+ & 1- ; electrically NEUTRAL



1+ & 1- ; electrically NEUTRAL



2+ & 2- ; electrically NEUTRAL



Classification of Acids Based on Strength



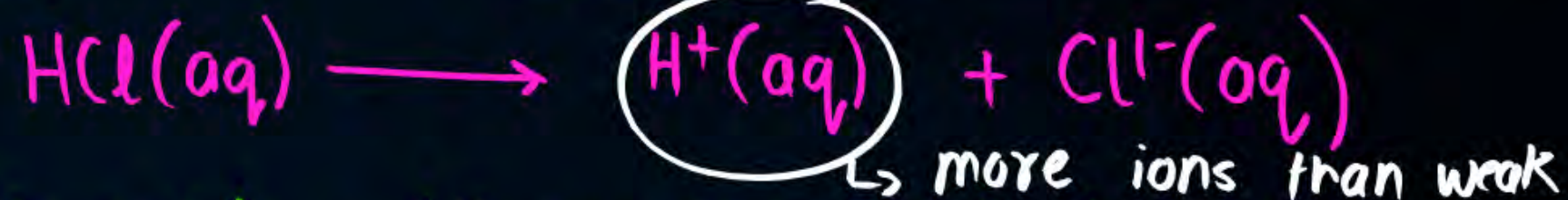
(C-I)

STRONG ACIDS

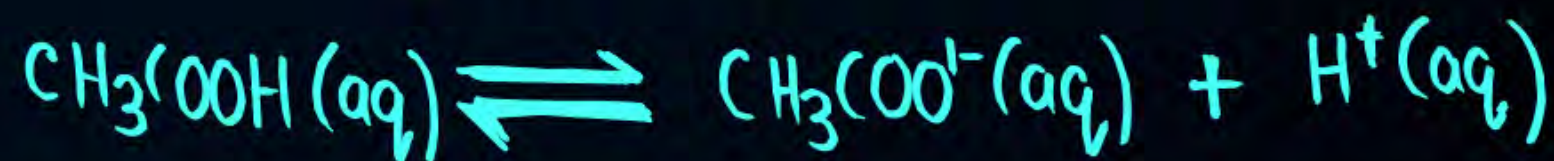
- (i) $\text{H}_2\text{SO}_4 \rightarrow$ Sulphuric acid
- (ii) $\text{HNO}_3 \rightarrow$ Nitric acid
- (iii) $\text{HCl} \rightarrow$ Hydrochloric acid
- (iv) $\text{HBr} \rightarrow$ Hydrobromic acid
- (v) $\text{HI} \rightarrow$ Hydroiodic acid
- (vi) $\text{HClO}_4 \rightarrow$ Perchloric acid
- (vii) $\text{HClO}_3 \rightarrow$ Chloric acid

(C-II)

- ① Strong Acid/ \rightarrow All particles of this acid completely dissociates into ions in water.
Strong Base



- ② Weak acid/ \rightarrow All particles don't dissociate completely into ions in water. It means partial dissociation takes place.
Weak base



Except these 7 acids all acids are weak acids including all organic acids.



Classification of Bases Based on Strength

Strong Base

Weak Base

CBSE



more than
weak base

CBSE

STRONG BASES

- ✓ (i) NaOH → Sodium hydroxide
- ✓ (ii) KOH → Potassium hydroxide
- ✓ (iii) Ca(OH)₂ → Calcium hydroxide
- ✓ (iv) Mg(OH)₂ → Magnesium hydroxide

WEAK BASES

- (i) NH₄OH → Ammonium hydroxide
- (ii) Cu(OH)₂ → Copper(II) hydroxide or Copper hydroxide



Trick

*All metal hydroxides of Group I and II of Modern Periodic Table are strong bases except hydroxide of Be

⇒ Group I: Li, Na, K, Rb, Cs

⇒ Group II: Mg, Ca, Sr, Ba

9 metal hydroxides are strong bases

Ca(OH)_2 & Mg(OH)_2 are strong bases or weak bases?

- ✓ (A) Strong base
- (B) Weak base

complete dissociation into ions
↓
STRONG BASE

low solubility in water

Weak alkali



Give a Thought



A strong acid will always be concentrated while a weak acid will be diluted one.

A. Yes

B. No

Concentrated acid

Dilute acid

STRONG
acid
[HCl]

conc. HCl

dil. HCl

WEAK
acid
[CH₃COOH]

conc. CH₃COOH

dil. CH₃COOH

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***Insaniyat Ka Gyaan
Jo Banaye Behtar Insan***



CBSE

QUESTION & CONCEPT BANK

Chapter-wise & Topic-wise

Includes Point-wise Answers with Step-wise Marking

CLASS 10th SCIENCE

- Chapter-wise
CONCEPT MAPS
- CBSE 2024-25 & NSEP 2025
CURRICULUM BASED
- Revision Blue Print & Solved Questions
COMPETENCY FOCUSED
- CBSE 2024 & 2023 with Handwritten Solutions
LATEST CBSE PAPERS
- As per Latest Pattern
MOCK TESTS

2025
EXAMINATION

👉 Rakshak Dua
👉 Samridhi Sharma
👉 Sunil Vijay Hingorani



Detailed Review and Importance of the Book in One Video.

Channel: PW Foundation YouTube



Class 10th में 95%+ लाने वाले बच्चे घटे ?

🤖 Reason and Solution ✅

Concept Polish (गृहकार्य)

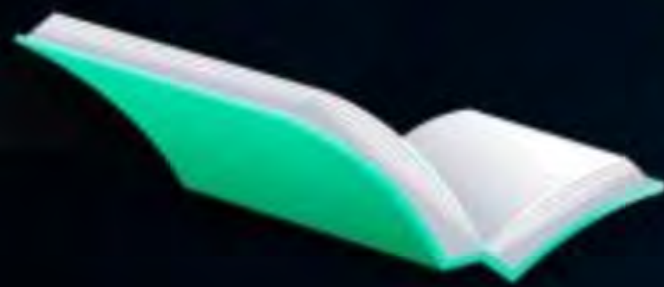
'No homework'



SUNIL BHAIYA IS ALWAYS THERE FOR YOU.

#sbsathhai (✓)

#pwsathhai (✓)



**THANK
YOU**

