

LAKSHYA



JEE 2024



- 
- Subject Name-Inorganic Chemistry

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- Chapter Name-Salt Analysis



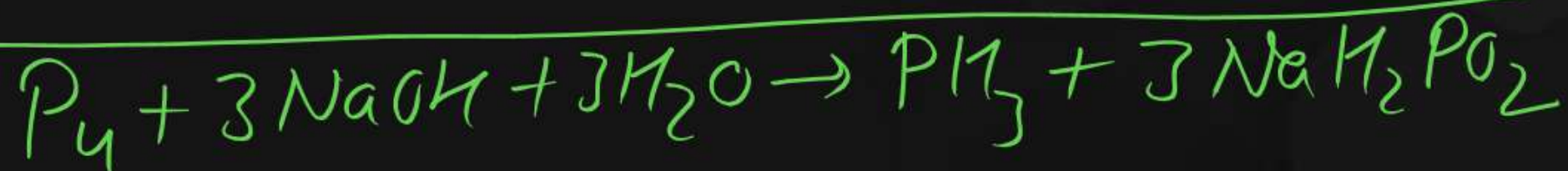
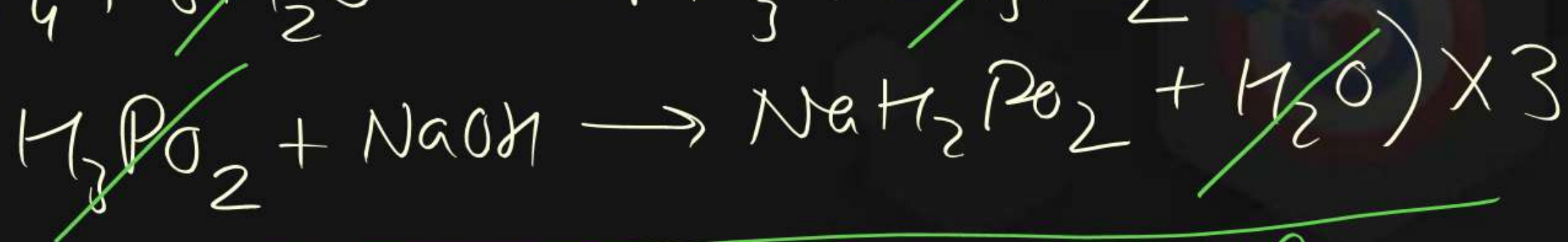
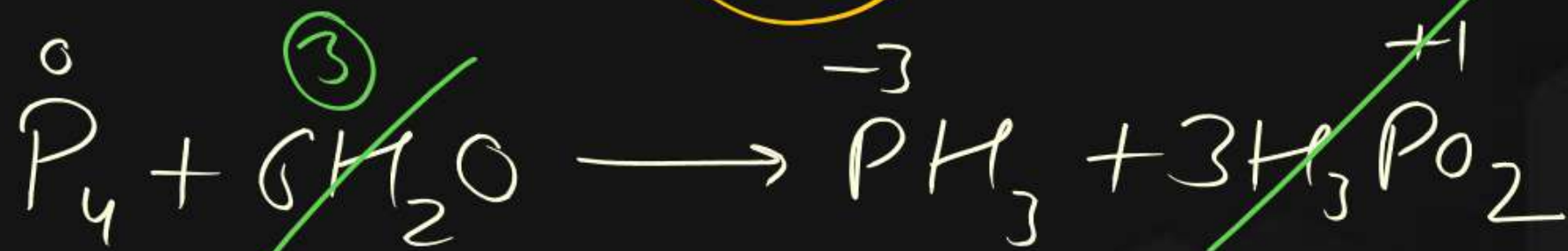
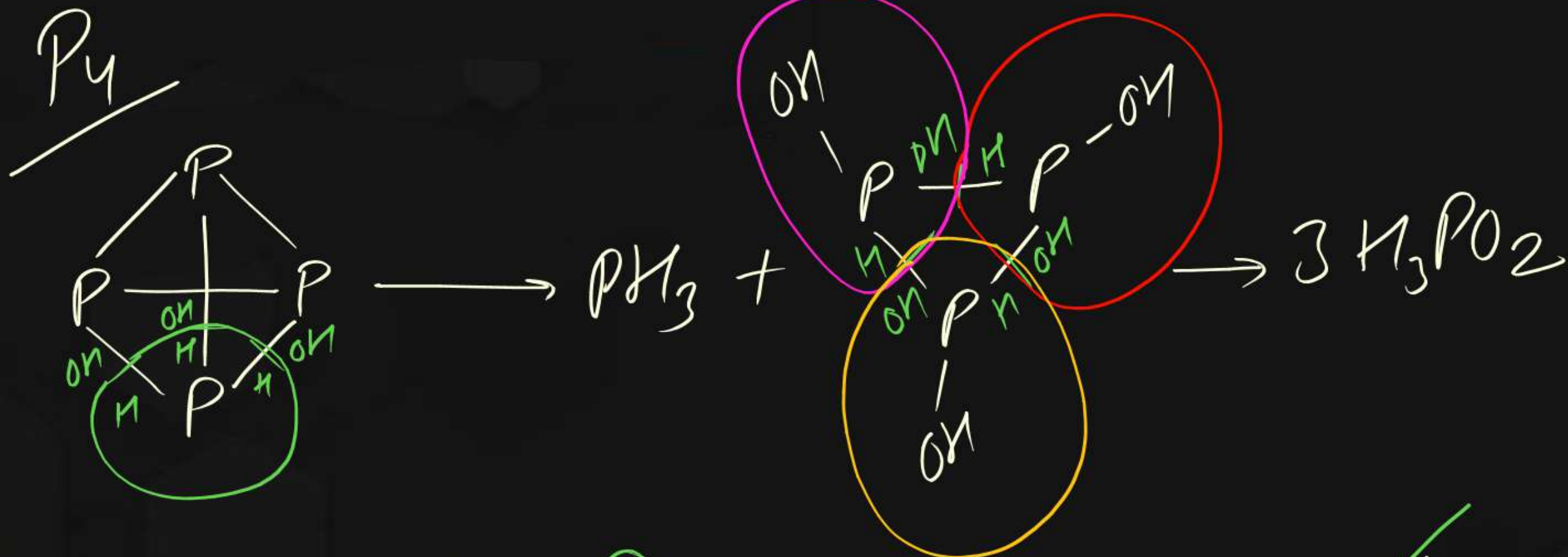
Lecture No. - 06

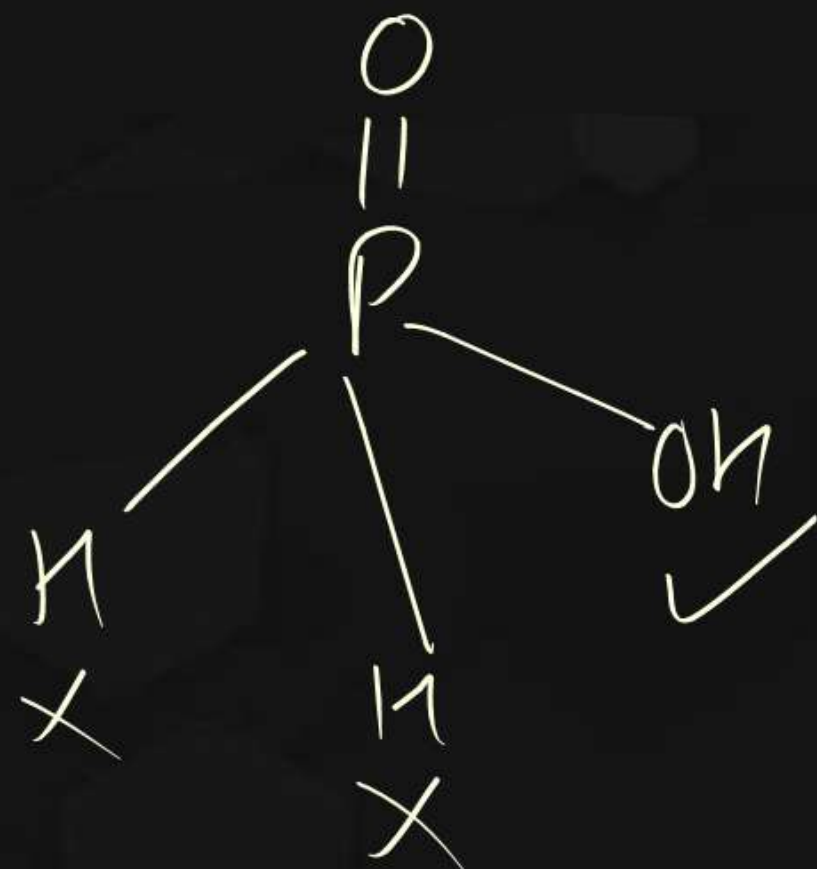
By- Amitabh Sharma (ATS sir)

Today's **Targets**

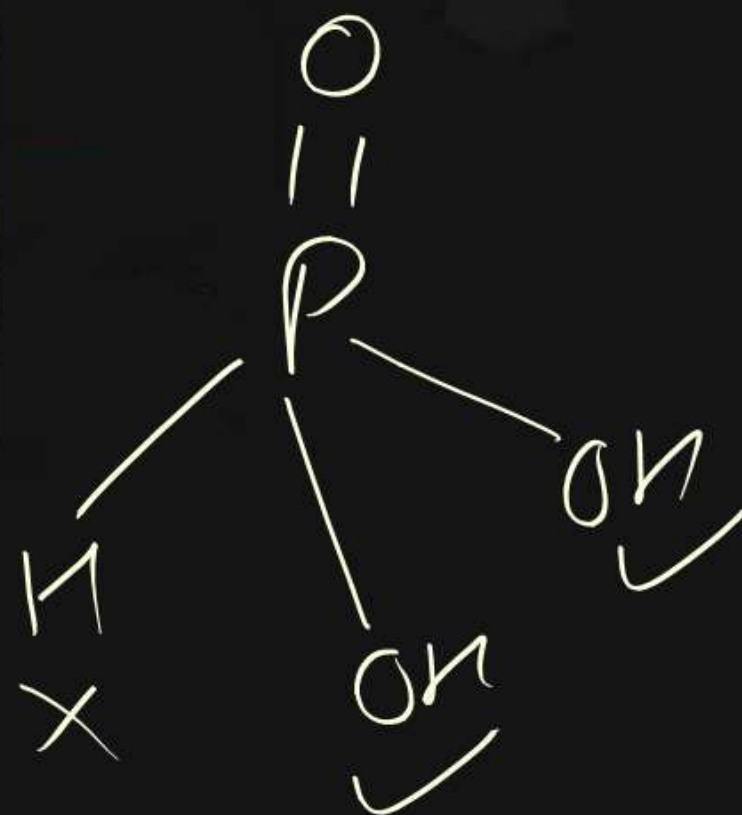
1 Test of Anions



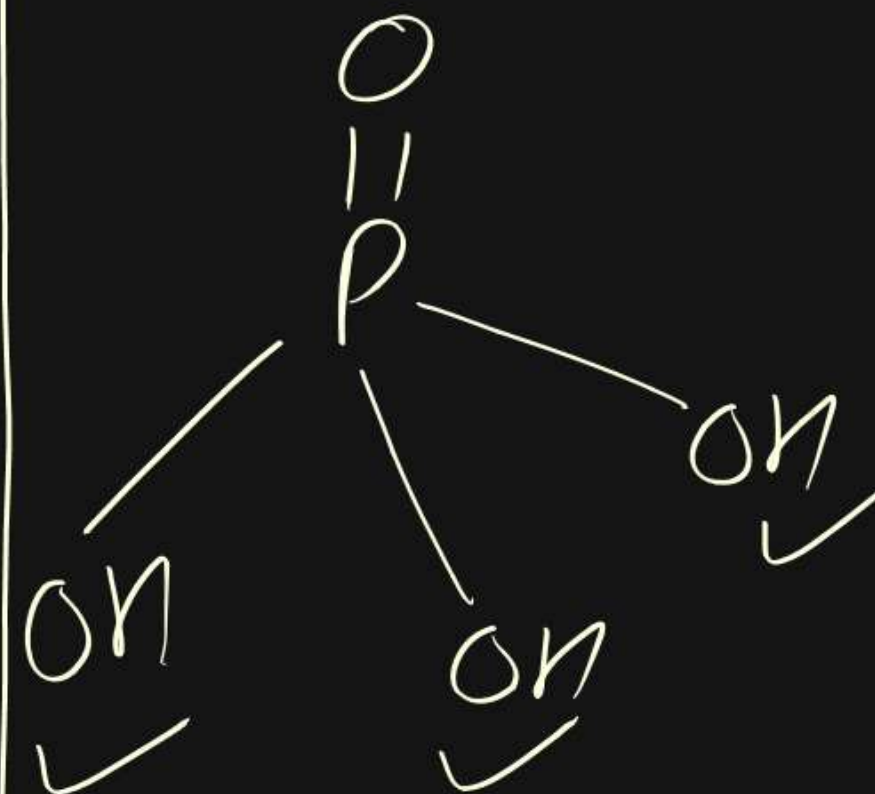




mono
phosphinic



Di
phosphonic



Tri
phosphoric acid



Classification of Anions



Anions are classified into two classes on the basis of their volatile product formation tendency on reaction with acids.

Class A :- They form volatile product with acids.

It is further divided into two sub-groups :-

- (a) Sub group – I :- gas $\rightarrow$ dil HCl / dil H_2SO_4
- (b) Sub-group – II :- gas $\rightarrow$ Conc H_2SO_4

Class B:- Don't form volatile product with acid. They are identified by their reaction in aqueous solution.

- (a) Sub group – I :- PPT reaction
- (b) Sub-group – II :- Redox reaction

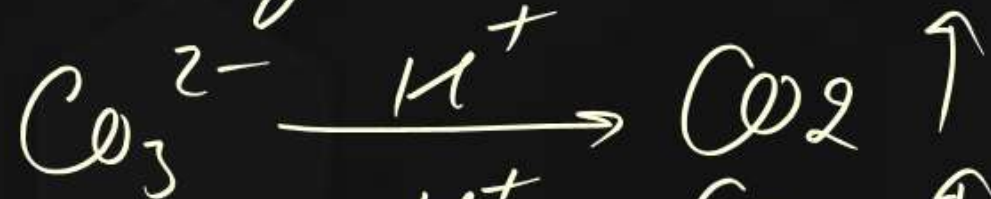
gas $\rightarrow$ dil HCl
dil H_2SO_4

Anion

Class A

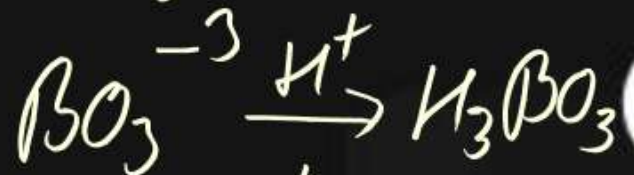


Sub gr $\Rightarrow$ I



Conc. H_2SO_4

Sub gr $\Rightarrow$ II



Anions of sub-group
1 (class A) will also
give test with conc.

H_2SO_4

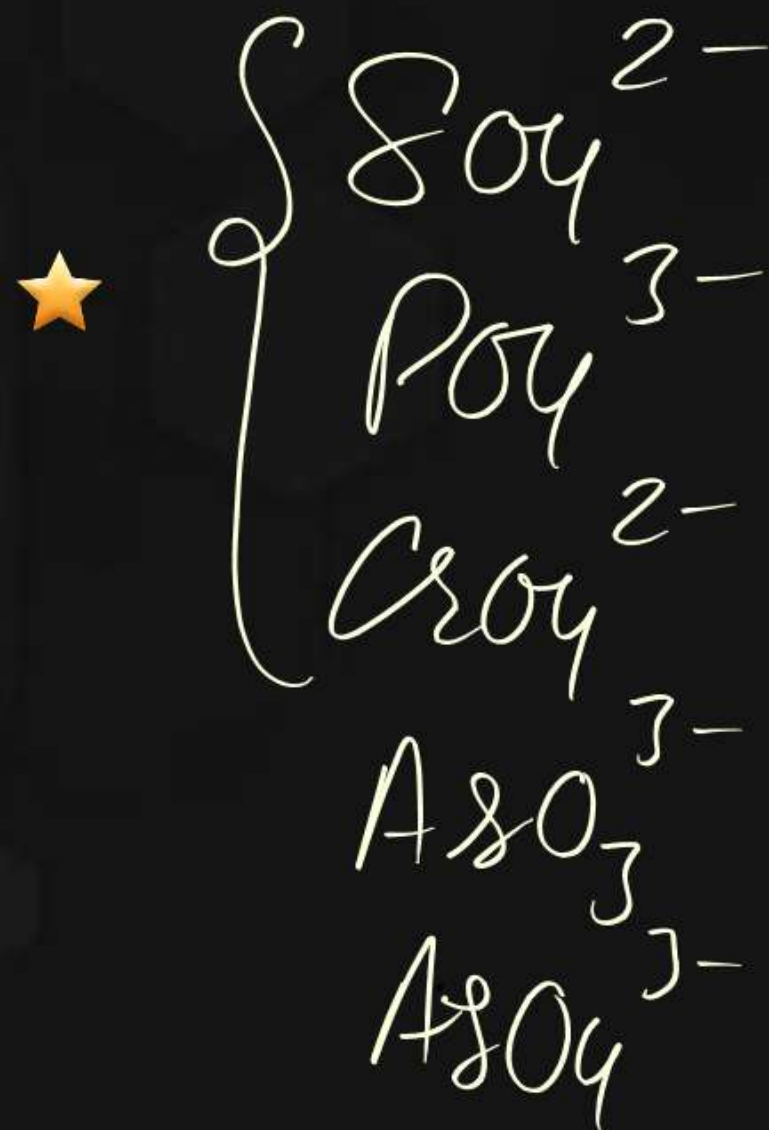
Q.S.P.

Class B



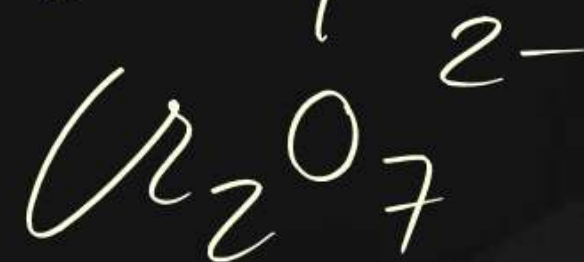
Sub gr $\Rightarrow$ I

P PT $\rightarrow$ reaction



Sub gr $\Rightarrow$ II

Redox $\rightarrow$ Reaction



Question



How many anions of class A will give colorful gases with conc. Acid?

A

$\text{NO}_2^- \longrightarrow \text{NO}_2$ Brown

B

$\text{NO}_3^- \longrightarrow$ — " —

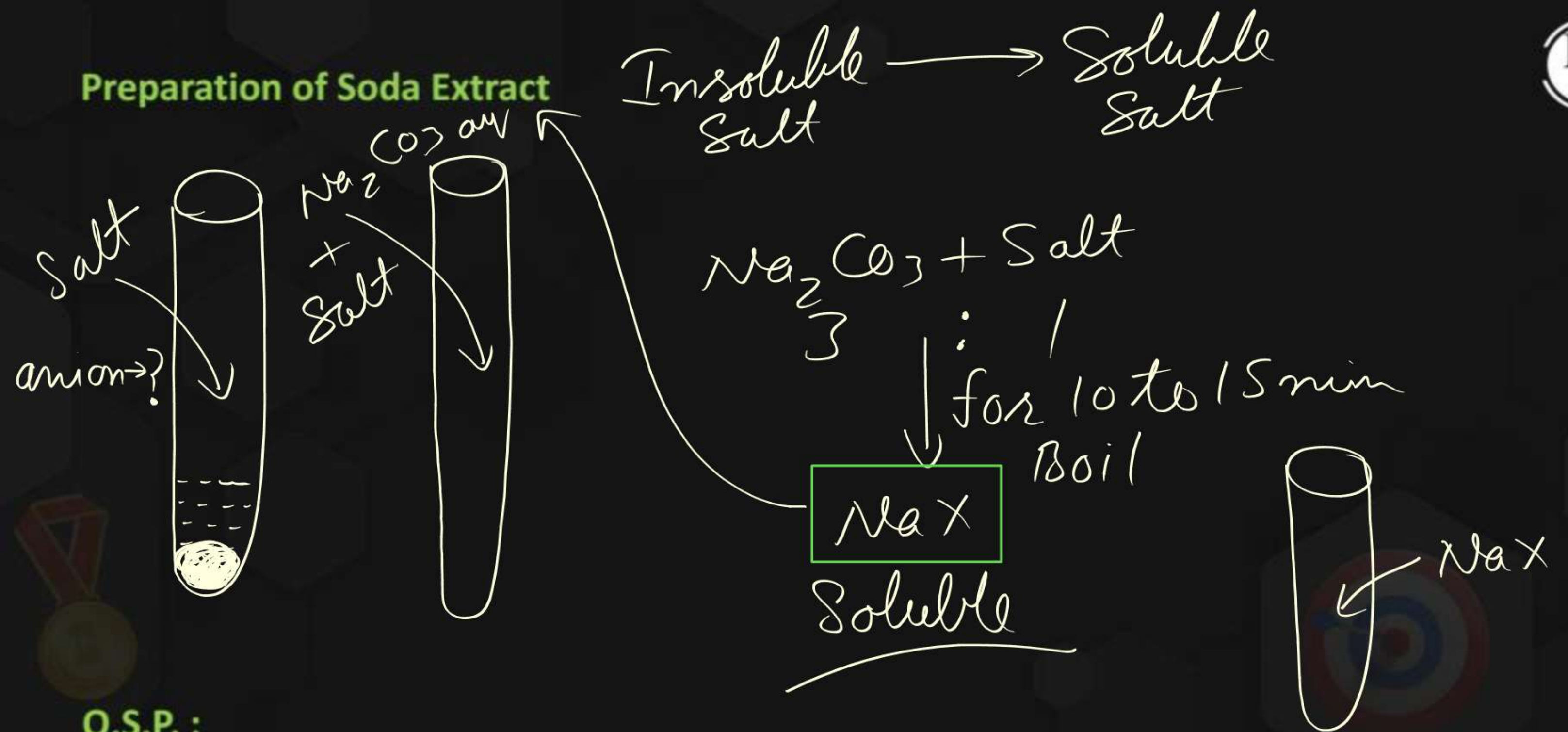
C

$\text{Br}^- \longrightarrow$ Reddish Brown

D

$\text{I}^- \longrightarrow$ Violet

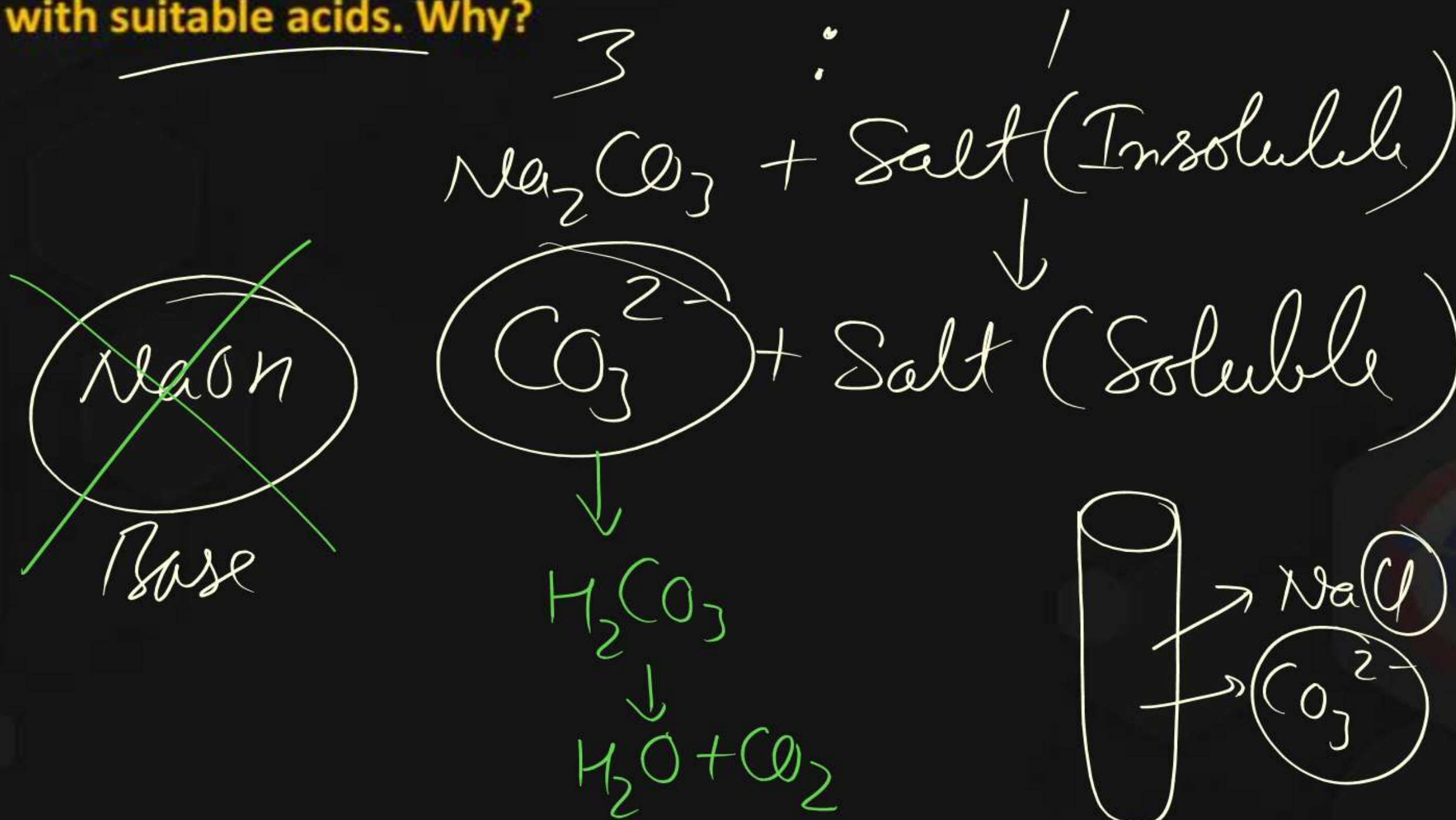
Preparation of Soda Extract

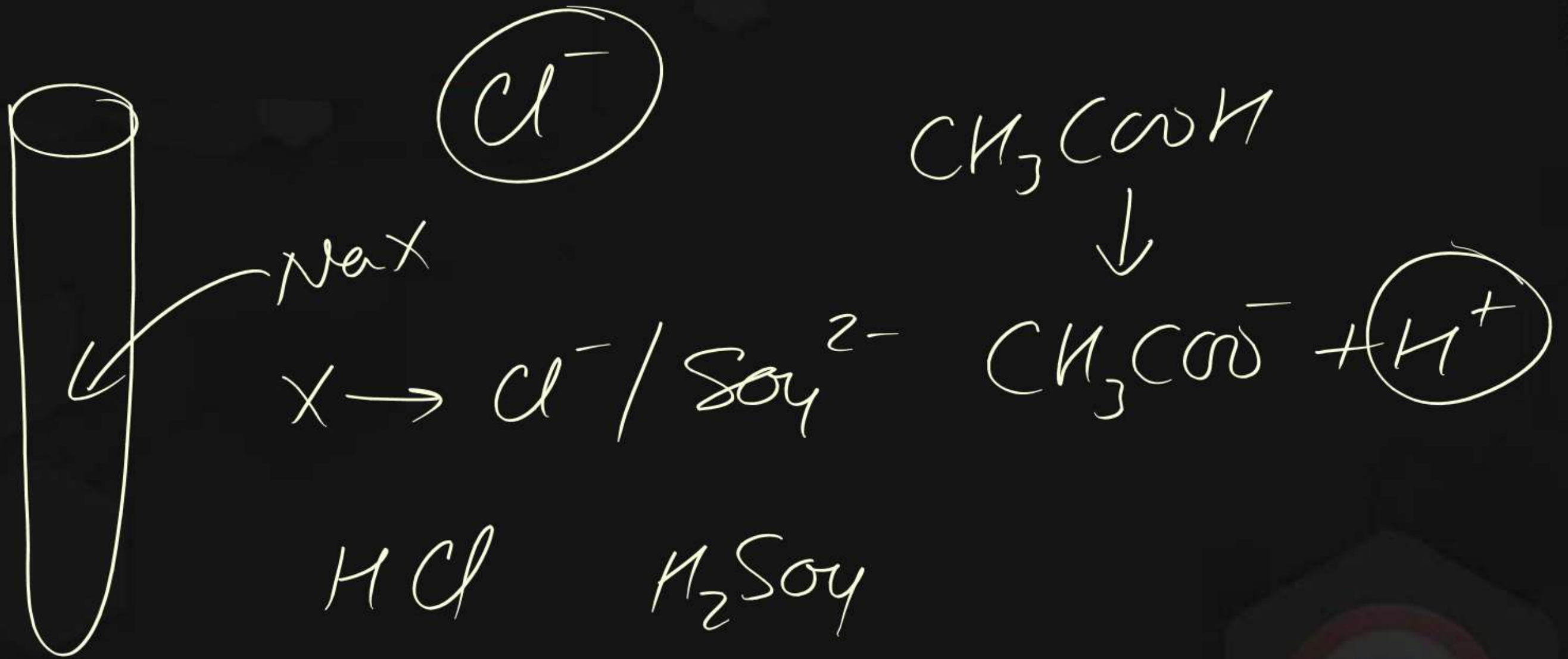


Q.S.P. :

- (i) Anionic part of acid must be different from anion that has to be detected.

Before performing test of anion Soda Extract Solutions must be neutralize with suitable acids. Why?





BKQ

Soda Ex do not use $\rightarrow$



Question



Oxidizing acid like conc. HNO_3 and conc. H_2SO_4 can not be used. Why?

↓ ↓
oxiⁿ acid



Carbonate (CO_3^{2-})

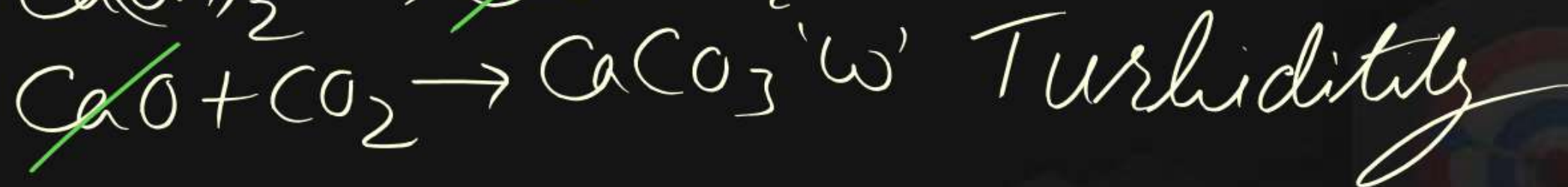


(1) Test with dil HCl

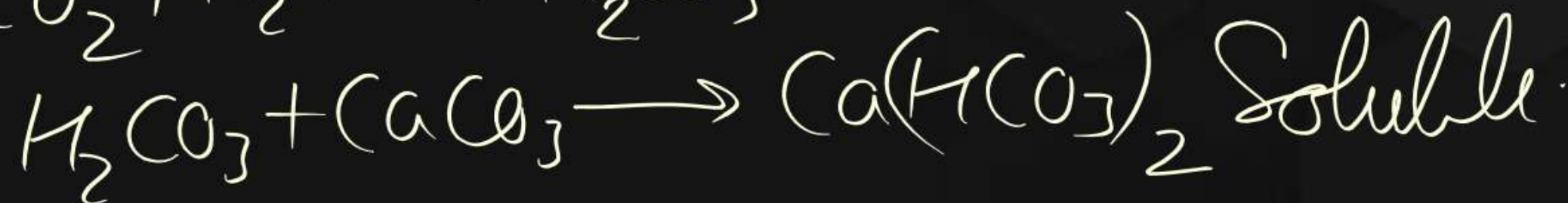
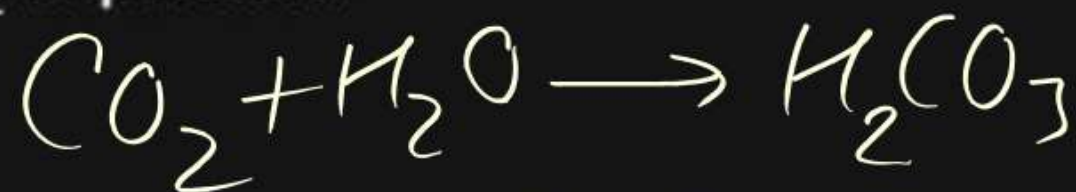


Prop. of CO_2 : Acidic, Released with Brisk effervescence, Colorless, Odorless, Gaseous oxide

IDENTIFICATION OF CO_2 : BY LIME WATER TEST

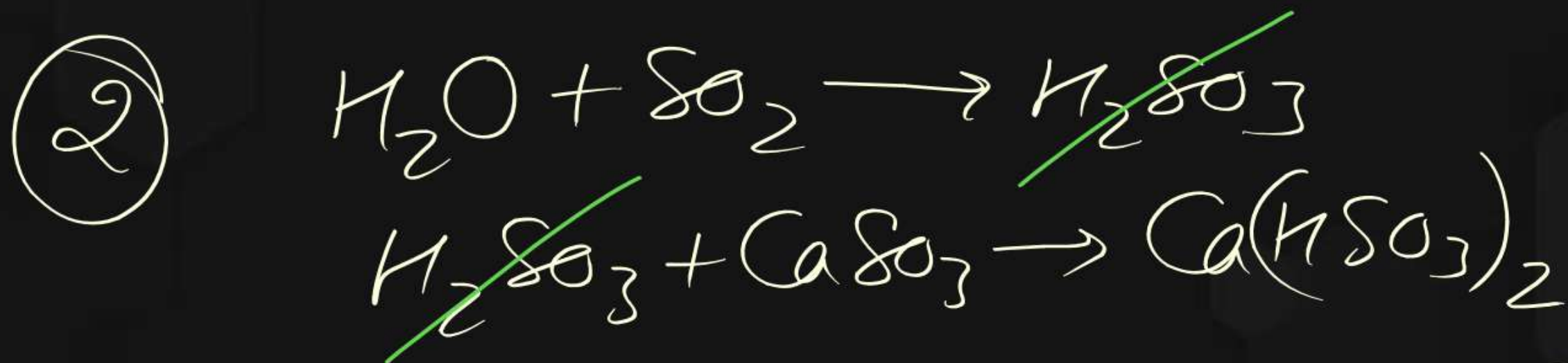


When excess of CO_2 is passed



Lime water test is possible for identification of SO_2 ?

✓ ✗
[True/False]



Question



Which compound can be used in place of Ca(OH)_2 for identification of CO_2 or SO_2 ?



Baryta
water



lime
water

Question



CO_3^{2-} is formed Ppt with CaCl_2 and turbidity is formed with Ca(OH)_2 in H_2O . Why?

$\text{CO}_3^{2-} + \text{CaCl}_2 \longrightarrow \text{CaCO}_3$ (white Ppt) due to High Concⁿ of Ca^{+2}

$\text{CO}_2 + \text{Ca(OH)}_2 \longrightarrow \text{H}_2\text{O} + \text{CaCO}_3$ (white turbidity)

