

UPDAAN



2025

Bharat Mata Ki Jai ♡

CHEMICAL REACTIONS AND EQUATIONS

Redox Reactions and Effects of
Oxidation in Daily Life

CHEMISTRY

Lecture - 07

BY: SUNIL BHAIIYA



Topics

to be covered

- 1 Double Displacement/Metathesis Reactions and Its Types (Contd.) (✓)
- 2 Master Redox Reactions in One Shot (✓)
- 3 Effects of Oxidation in Daily Life – Types of Redox Reactions – Corrosion (✓)



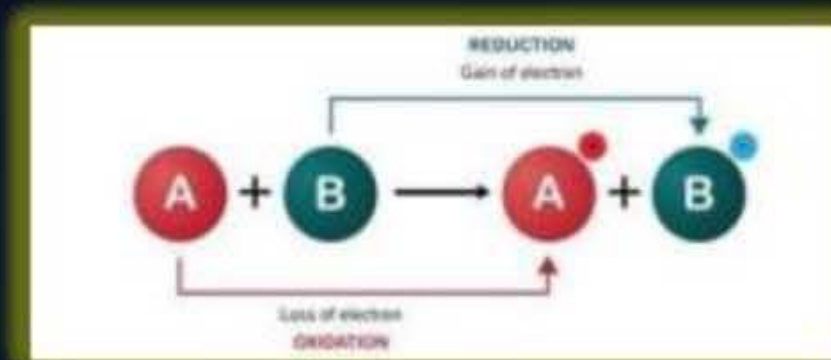
Knowledge Ride On



Double Displacement/Metathesis
Reactions and Its Types (Contd.)



Knowledge Ride On



Master Redox Reactions in One Shot

(✓)

Knowledge Ride On



Effects of Oxidation in Daily Life –
Types of Redox Reactions –
Corrosion

Knowledge Ride On



Insaniyat Ka Gyaan (✓)



Can you decode the below element?



Bar

+

IUM

= Barium (Ba)

RIDDLE WALLAH



Can you decode the below element?



+

IUM

= Barium (Ba)

Pyaare Bacche Be Like



Double Displacement/Metathesis Reactions and Its Types (Contd.)

→ 'Homework'



Give a Thought



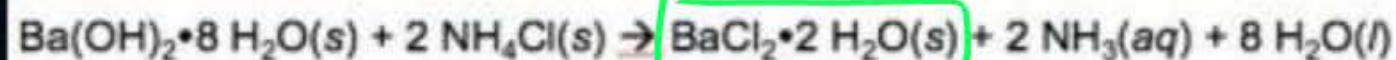
(NCERT Textbook)

Take about 2 g barium hydroxide in a test tube. Add 1 g of ammonium chloride and mix with the help of a glass rod. Touch the bottom of the test tube with your palm. What do you feel? Is this an exothermic or endothermic reaction?

Give a Thought



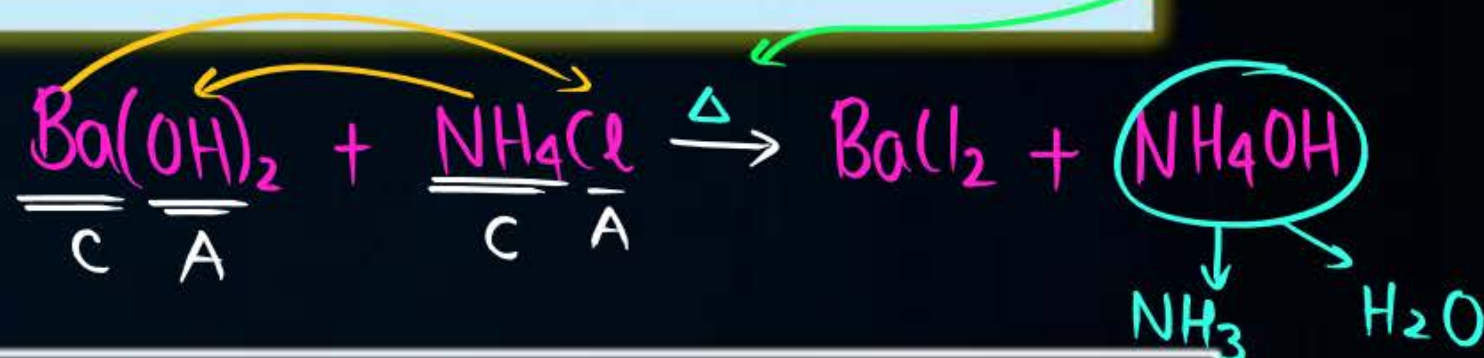
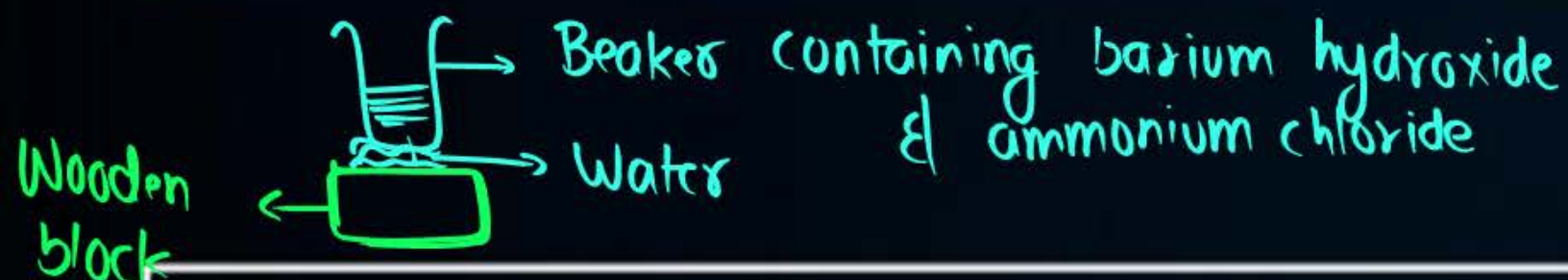
actual rxn



looks like 'SNOW'

absorbs
heat from
surroundings

Take about 2 g barium hydroxide in a test tube. Add 1 g of ammonium chloride and mix with the help of a glass rod. Touch the bottom of the test tube with your palm. What do you feel? Is this an exothermic or endothermic reaction?

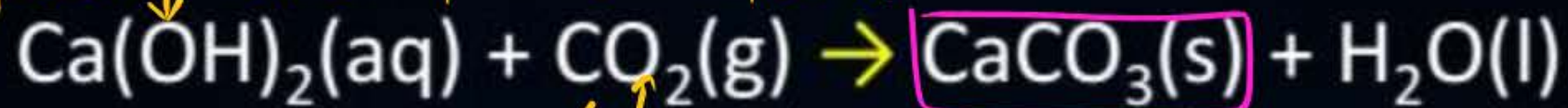


Video: Water between wooden block and beaker freezes and that's why beaker got stuck with the wooden block. Hence, it is a/an:

- Endothermic reaction ✓
- Solid-solid double displacement reaction ✓



aqueous solution of ionic compound



Double Displacement

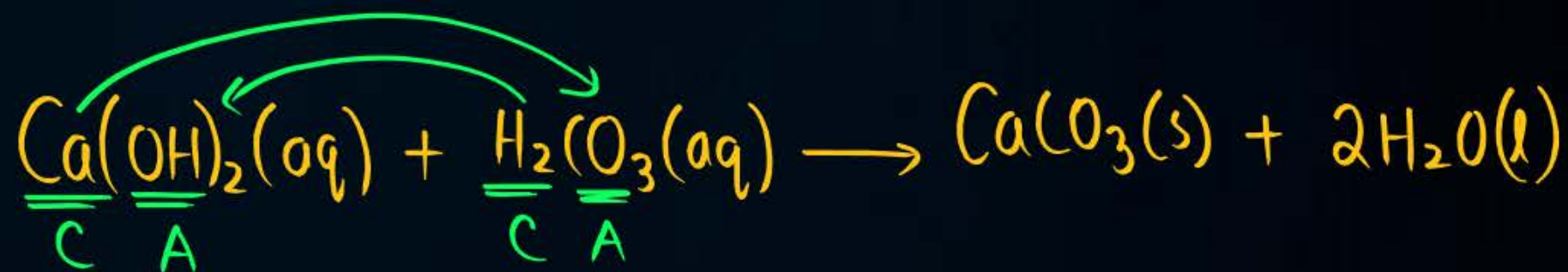
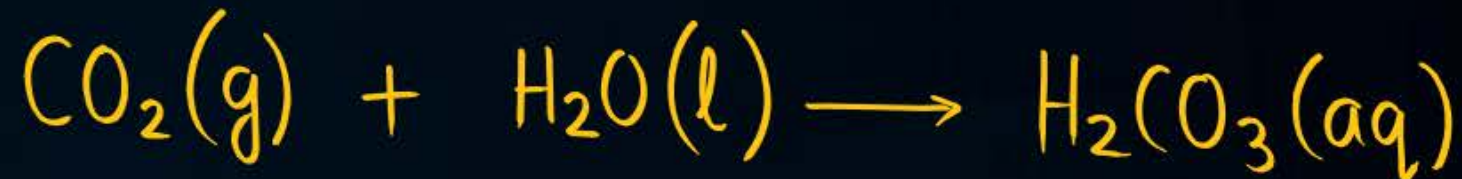
Rxn
↓

Precipitation Rxn

↓
Limewater
(colourless soln)

soln turns milky / turbid because of CaCO_3
insoluble white ppt.

Mechanism - 'Easy Language'



Double Displacement Rxn → Precipitation Rxn

aqueous
solution of
two ionic
compounds

a gas &
aqueous soln
of ionic compound

↓
Done in last
class



Introduction to Redox Reactions

A chemical reaction in which reduction and oxidation take place simultaneously. (एक साथ)

Redox

✓ (i) Addition/removal of hydrogen and oxygen

↓
(In detail in syllabus)

(ii) Loss/gain of electron concept - Brief

↓
'CH-O2'



Addition/Removal of Hydrogen and Oxygen

Oxidation

OR
→ Addition of oxygen
OR
→ Removal of hydrogen

OR
BOTH

Reduction

→ Addition of hydrogen
OR
→ Removal of oxygen OR

BOTH

Let's Practice



PW Ka **ChemStar!**

Question

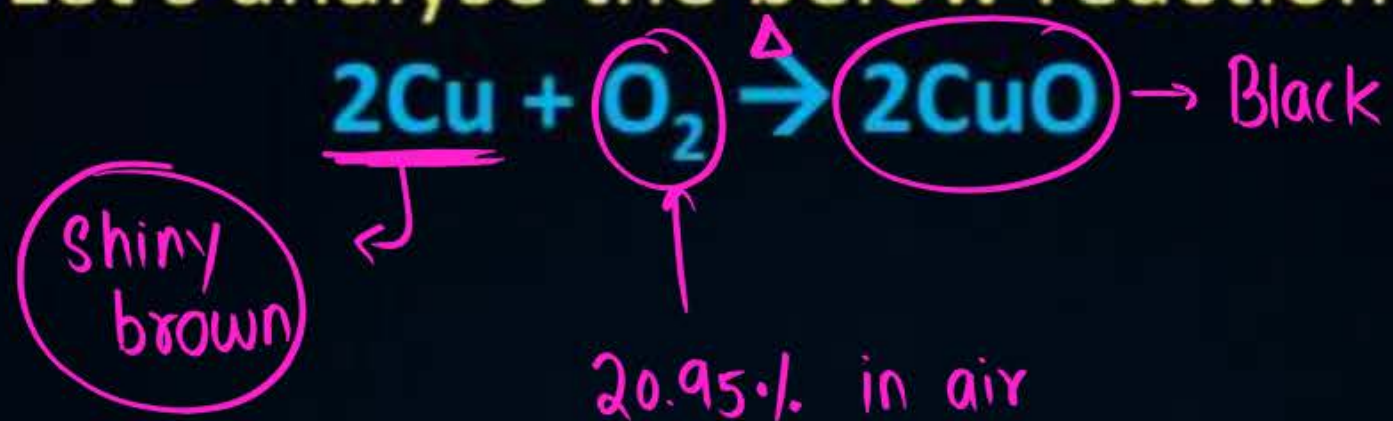


Choose the correct option that contains correct statements about the reduction reaction.

- I. Hydrogen is removed
 - II. Oxygen is added
 - III. Hydrogen is added
 - IV. Oxygen is removed
- } → OXIDATION
- } → REDUCTION

- A** I, II
- B** I, III
- C** III, IV
- D** II, IV

Let's analyse the below reaction!



\Rightarrow Reduction: O_2

Oxidation: Cu

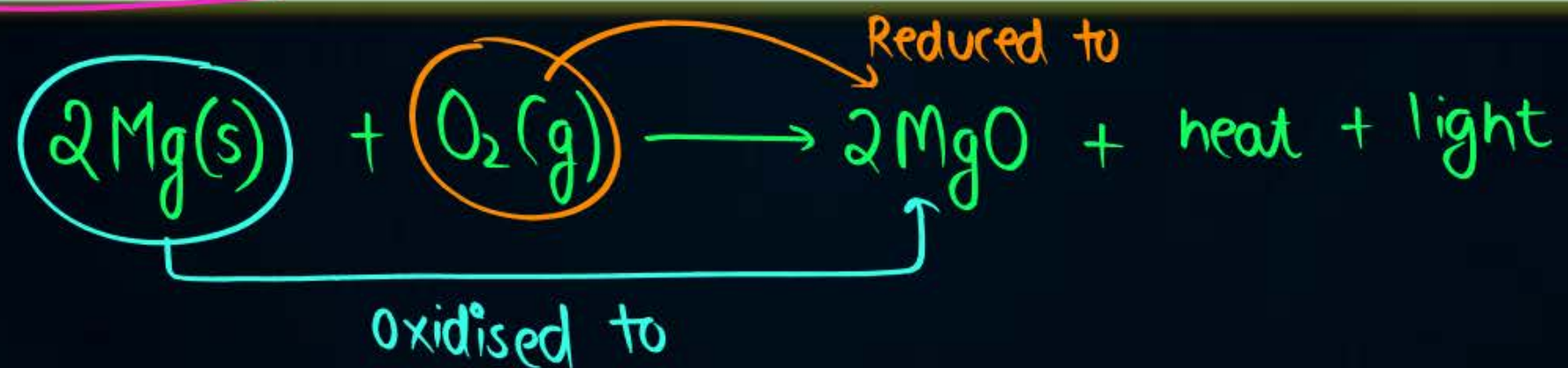


Give a Thought



(NCERT Textbook)

Recall Activity 1.1, where a magnesium ribbon burns with a dazzling flame in air (oxygen) and changes into a white substance, magnesium oxide. Is magnesium being oxidised or reduced in this reaction?





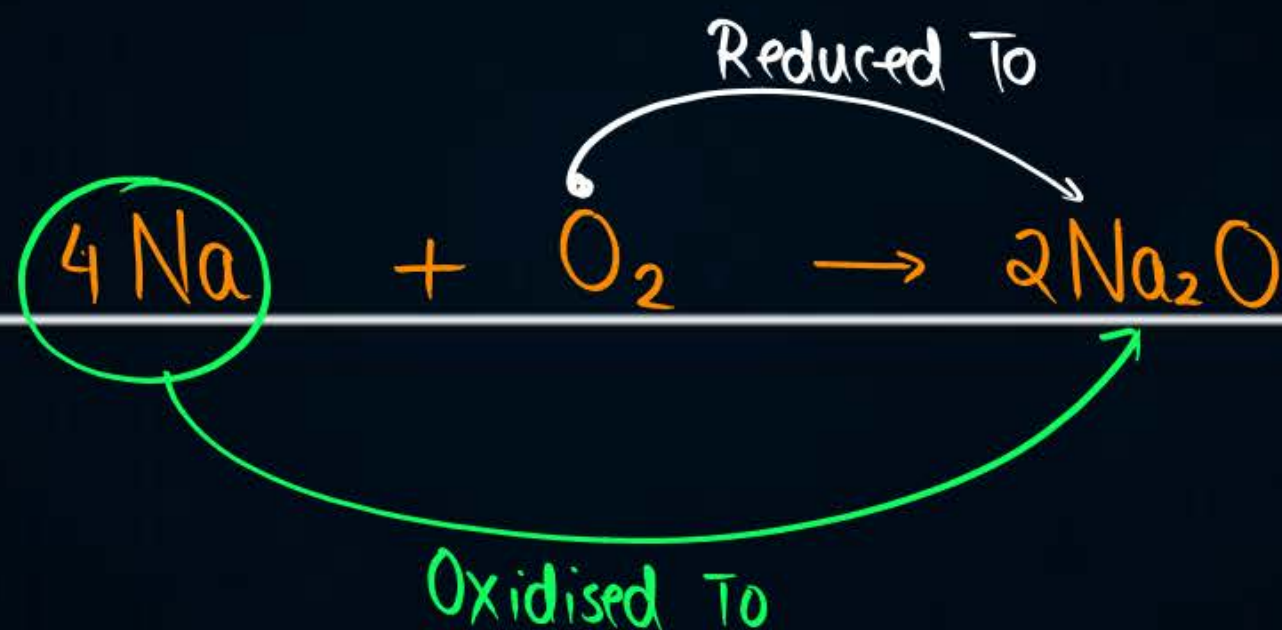
Give a Thought



Heating sodium in presence of oxygen forms sodium oxide is a redox reaction or not?

A. Yes

B. No





Let's Practice

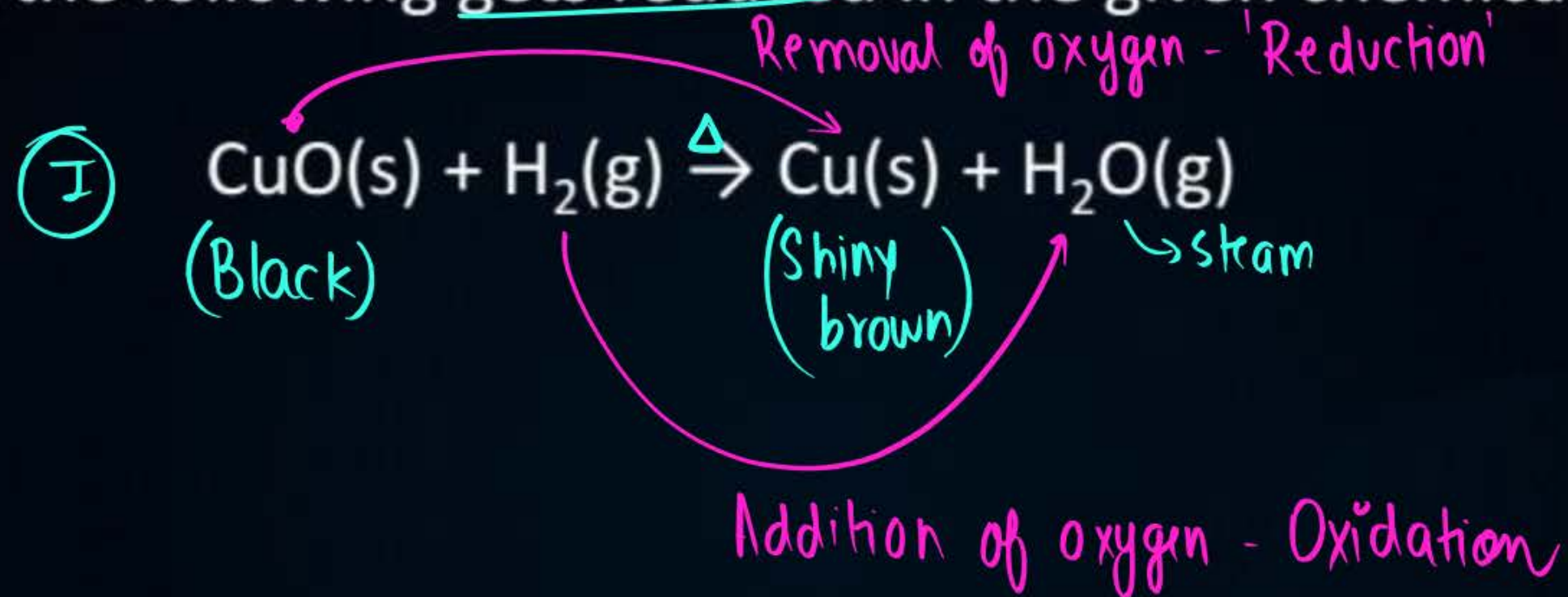


PW Ka **ChemStar!**

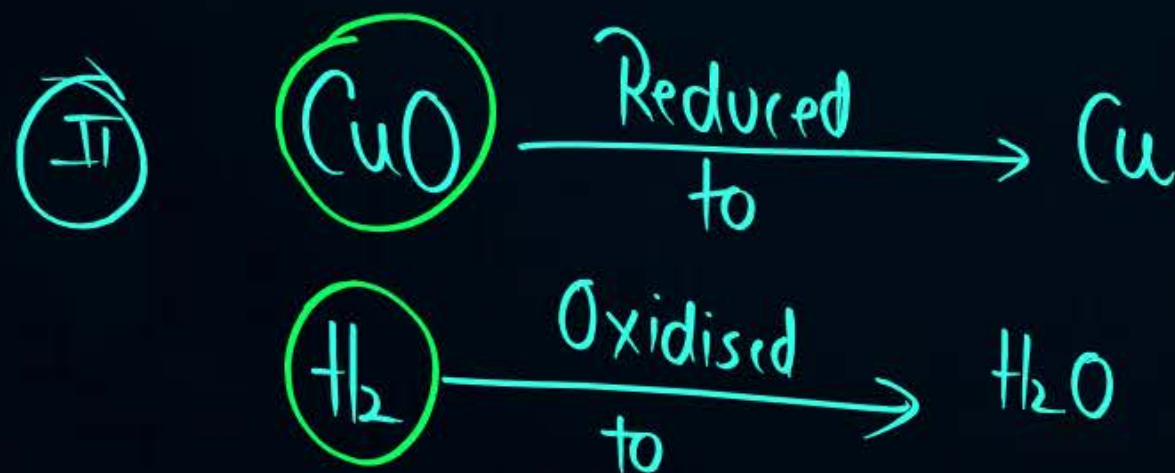
Question



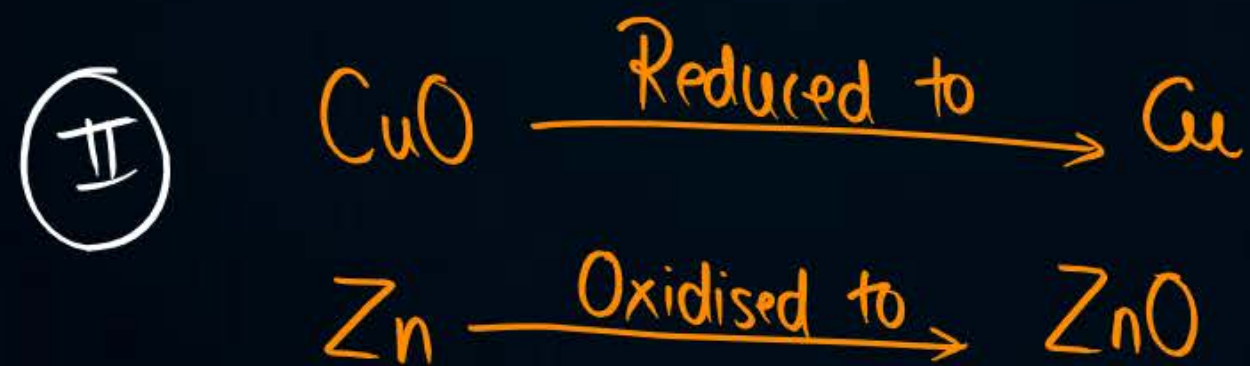
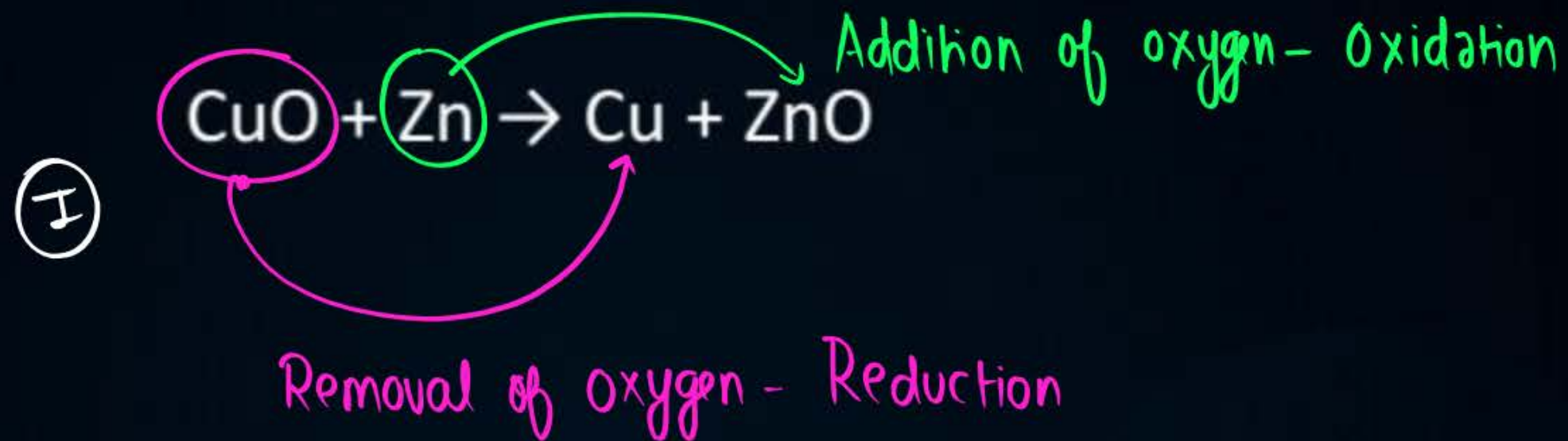
Which among the following gets reduced in the given chemical reaction?



- A** Cu
- B** ✓ CuO
- C** H₂O
- D** H₂



Which among the following gets reduced in the given chemical reaction?



- A** Zn
- B** CuO
- C** ZnO
- D** Cu



Oxidising Agent/Oxidant

Tareeka 1st

USE THIS

Oxidises others and itself gets reduced

Reduction

one which is reduced in a chemical rxn is called an oxidising agent / oxidant

④ Pick the oxidant from left side of rxn

Tareeka 2nd

Gives oxygen or gains hydrogen

Oxidising agent

(i)

S.B.

Hashmukhlal

Removal of oxygen on S.B. → **Reduction**

Addition of oxygen on hashmukhlal

Oxidation

(ii)

OA.

S.B.

Hashmukhlal

Addition of H₂ on S.B.

Reduction

Removal of H₂ on hashmukhlal → **Oxidation**



Reducing Agent/Reductant

Tareeka Ist

Reduces others and itself gets
~~reduced~~ oxidised

Tareeka IInd

Gives hydrogen or gains
oxygen

On another substance & it
REDUCES. Reducing agent
in turn will get oxidised.

One that oxidises in a chemical
rxn is called a reducing agent/reductant

Oxidation

→ Pick it from left side of rxn

Let's Practice



PW Ka **ChemStar!**

Question



Identify the oxidising and reducing agent in the given chemical reaction.

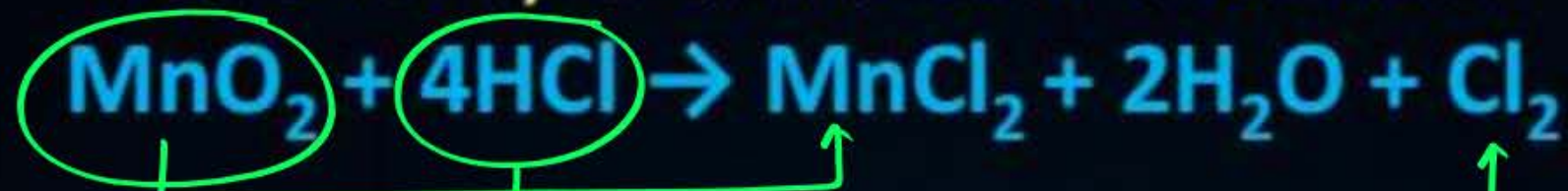


Addition of oxygen - **OXIDATION** - Reducing agent

Removal of oxygen - **REDUCTION** - **OXIDISING AGENT**

- A** CuO: Oxidising agent, Cu: Reducing agent
- B** CuO: Reducing agent, H₂: Oxidising agent
- C** CuO: Oxidising agent, H₂: Reducing agent
- D** H₂: Reducing agent, CuO: Oxidising agent

Let's analyse the below reaction!



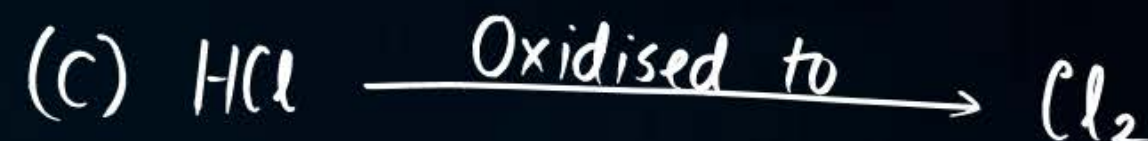
Removal of oxygen
↓

REDUCTION → oxidising agent

Removal of hydrogen -

Oxidation

Reducing Agent



(B) MnO_2 : Oxidising agent

(D) HCl : Reducing agent

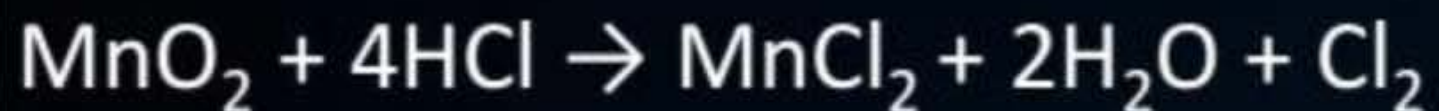


PYQs' Wallah



PW Ka ChemStar!

In the reaction:



- (a) Name the compound (i) oxidised (ii) reduced.
- (b) Define oxidation and reduction on its basis.

In the reaction:



- (a) Name the compound (i) oxidised (ii) reduced.
(b) Define oxidation and reduction on its basis.

Reduction

Oxygen has been removed
from MnO_2 to form
 MnCl_2

(a) Hydrogen is removed from HCl to form Cl_2 . Hence, HCl has been oxidised to Cl_2 and it is obvious that MnO_2 has been reduced.

(b) Oxidation is a process in which there is a removal of hydrogen from a substance while reduction is a process in which there is a removal of oxygen from a substance.

OR

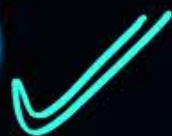
KYA BOLTI PUBLIC



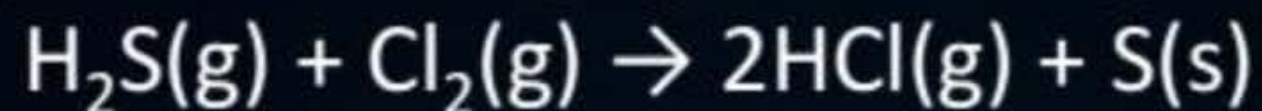
Concept Polish (गृहकार्य)



Question



Identify the oxidising and reducing agent in the given chemical reaction.



- A** H_2S : Oxidising agent, Cl_2 : Reducing agent
- B** H_2S : Reducing agent, Cl_2 : Oxidising agent
- C** H_2S : Reducing agent, S : Oxidising agent
- D** Cl_2 : Oxidising agent, HCl : Reducing agent

Question



✓
Is it right to say that generally all displacement reactions are exothermic and redox reactions?

Insaniyat Ka Gyaan

*Insaniyat Ka Gyaan
Jo Banae Behtar Insan*

इंसान दुनिया के तानो या नज़र से
नहीं अपने मन पर नियंत्रण न रखने
की वजह से विफल होता है

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 & NEP 2020
CURRICULUM BASED

Revision Blue Print & Solved Questions
COMPETENCY FOCUSED

CBSE 2024 & 2023 with Handwritten Solutions
LATEST CBSE PAPERS

As per Latest Pattern
MOCK TESTS

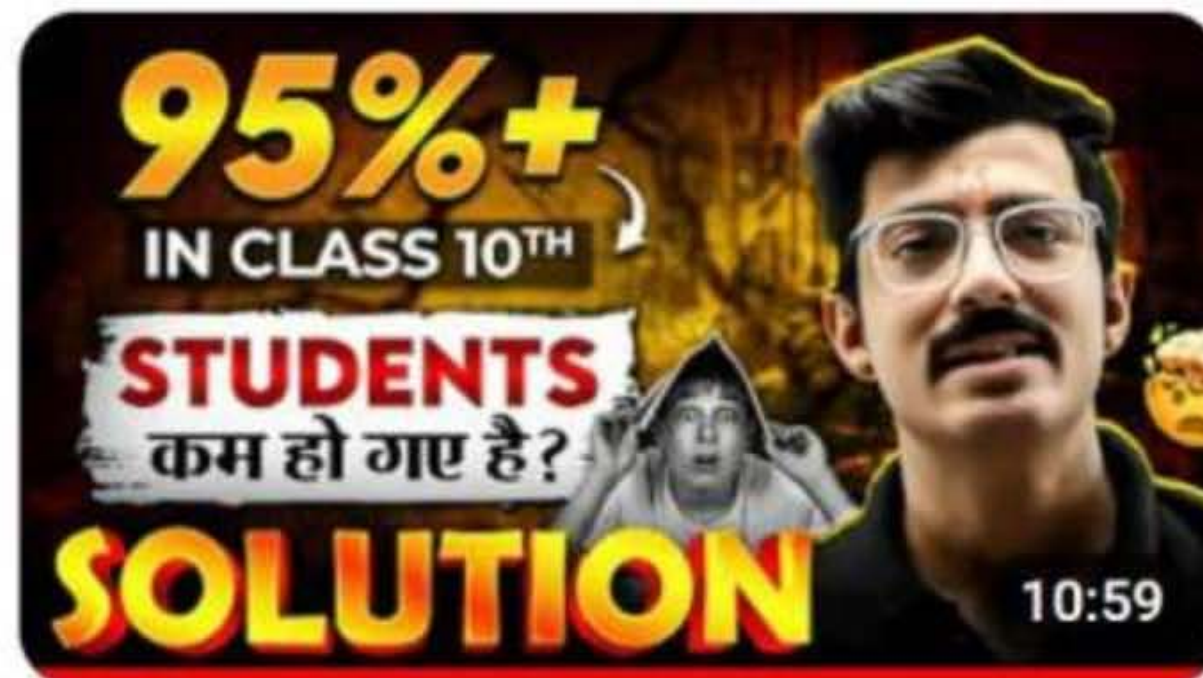
2025
EXAMINATION

👉 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 ✅

YouTube Shorts → Amla Benefits

SUNIL BHAIYA IS ALWAYS THERE FOR YOU.

#sbsathhai ✓

#pwsathhai ✓



**THANK
YOU**

