

Chapter - Chemical Reactions And Equations

* Chemical Reaction :-

Chemical reactions are the processes in which new substances with new properties are formed.

* Chemical Equations :-

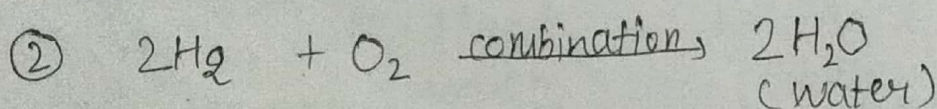
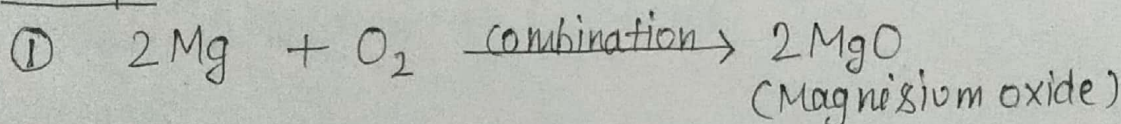
The method of representing a chemical reaction with the help of symbols and formulae of the substances involved in it is known as a chemical equation.

* Types of Chemical Reactions :-

① Combination Reactions :- $(A + B \rightarrow AB)$

Those reactions in which two or more substances combine to form a single substance, are called combination reactions.

Example :



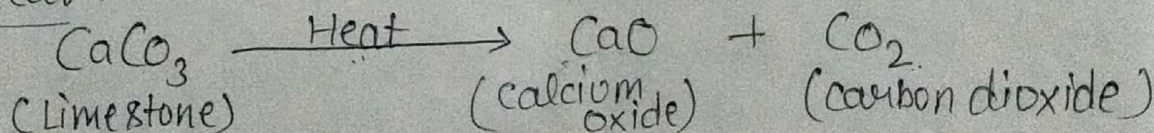
2017

② Decomposition Reactions :- $(AB \rightarrow A + B)$

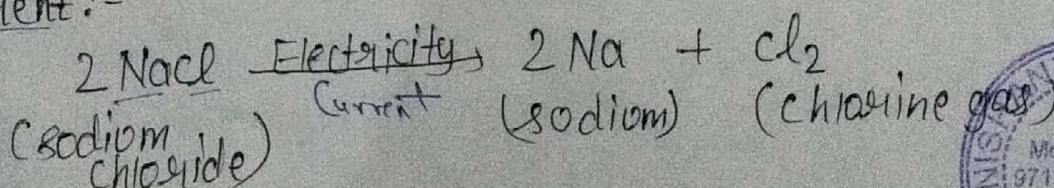
Those reactions in which a compound splits up into two or more simpler substances are known as decomposition reactions.

Example :

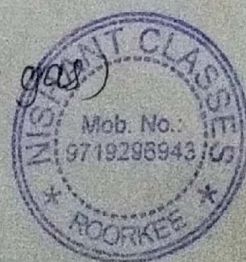
① By Heat :-



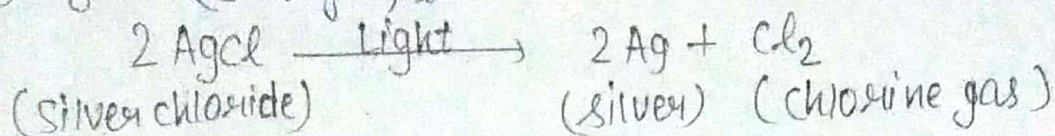
② By Current :-



This process is known as II Electrolysis.



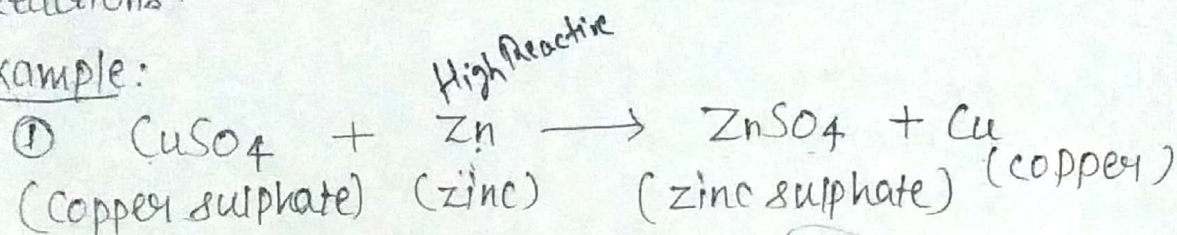
③ By Light : (Sunlight) ^{sun}



③ Displacement Reactions :- $(A + BC \rightarrow AC + B)$

Those reactions in which one element takes the place of another element in a compound, are known as Displacement Reactions.

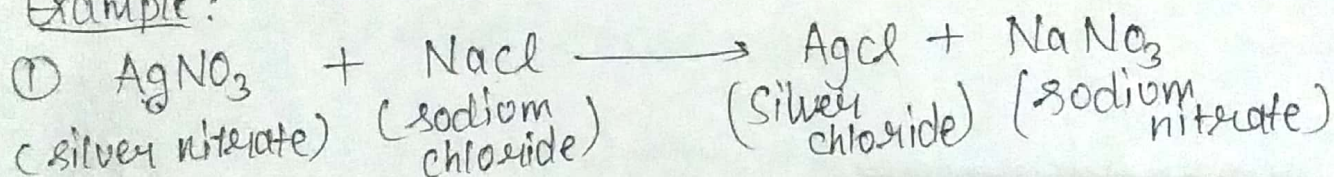
Example :



④ Double - Displacement Reactions :- $(AB + CD \rightarrow AD + CB)$

Those reactions in which two compounds react by an exchange of ions to form two new compounds are called Double Displacement Reactions.

Example :



⑤ Oxidation And Reduction Reactions :-

Oxidation :-

- ① The addition of oxygen to a substance is called oxidation.
- ② The removal of hydrogen from a substance is also called oxidation.

Reduction :-

- ① The addition of hydrogen to a substance is called reduction.
- ② The removal of oxygen from a substance is called reduction.

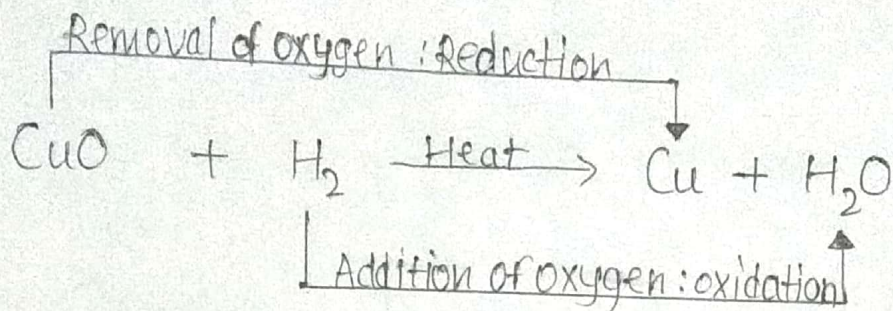
2017 Redox :- (Reduction + Oxidation)

The oxidation and reduction reactions are also Redox Reactions.

(12)



Example :

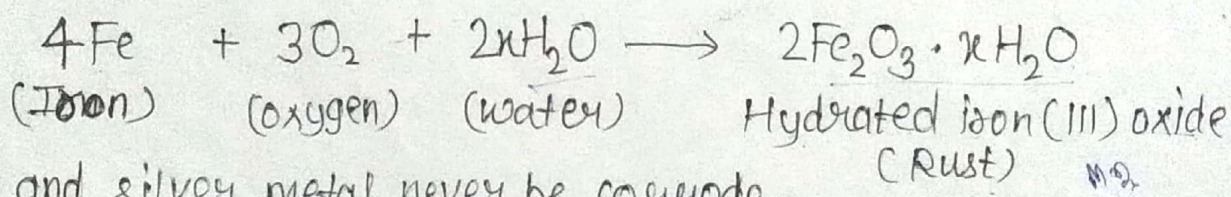


* Effects of Oxidation Reactions :-

① Corrosion :- 2.18

Corrosion is the process in which metals are eaten up gradually by the action of air, moisture or a chemical on their surfaces. Corrosion is caused mainly by the oxidation of metals by the oxygen of air. Rusting of iron metal is the most common form of corrosion.

Example :



* Gold and silver metal never be corrode.

② Rancidity :-

2.17 The conditions produced by aerial oxidation of fats and oils in foods marked by unpleasant smell and taste is called Rancidity.

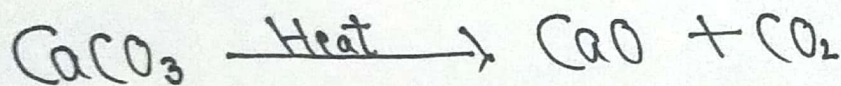
It can be prevented by the following ways :-

- ① Rancidity of food can be prevented by adding anti-oxidants to foods containing fats and oils.
- ② Rancidity can be prevented by packaging fat and oil containing foods in nitrogen gas.
- ③ Rancidity can be retarded by keeping food in a refrigerator.
- ④ Rancidity can be retarded by storing food in air-tight containers.
- ⑤ Rancidity can be retarded by storing foods away from light.

²⁰¹⁸
Exothermic Reaction - The reaction in which heat is evolved (produce) is known as Exothermic rxⁿ.



Endothermic Reaction - The reaction in which heat is absorbed is known as Endothermic rxⁿ.



S-7-2

Reactivity Series

Most
reactive

←

K

Na

Ca

Mg

Al

C

Zn

Fe

Sn

Pb

H

Cu

Ag

Au

Pt

Reactivity
decreases

→ Least Reactive



②