

DAYAWATI MODI ACADEMY

MODIPURAM MEERUT

Class X

ASSIGNMENT AND NOTES - CHEMISTRY

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ASSIGNMENT

1. Why should a magnesium ribbon be cleaned before burning in air?
2. Potassium chlorate on heating forms potassium chloride and oxygen. Write a balanced equation.
3. Give an example of a precipitation reaction. Which is also exothermic?
4. What happens chemically when quicklime is added to water? Write equation for it.

5. What type of reaction is represented by the digestion of food in our body?
6. Why will the color of heated copper powder become black when air is passed over it?

7. Give one example of each type of decomposition reaction.
8. What is a redox reaction? Identify oxidation reaction, oxidizing agent, reducing agent and reduction reaction from the following equation?
$$\text{CuO} + \text{C} \rightarrow \text{CO} + \text{Cu}$$
9. What is rancidity? Mention any two ways by which rancidity can be prevented.
10. Write the chemical equation of the reaction in which the following changes have taken place with an example of each:
 - (i) Change in colour
 - (ii) Change in temperature
 - (iii) Formation of precipitate
11. 2 g of ferrous sulphate crystals are heated in a dry boiling tube. (i)
List any two observations
(ii). Name the type of chemical reaction taking place.
12. (iii). Write the chemical equation for the reaction.
13. (a). Discuss the importance of decomposition reaction in metal industry with three points.
(b). Write the balanced chemical equation for the following reaction:
 - (i). Phosphorus burns in presence of chlorine to form phosphorus pentachloride
 - (ii). Burning of natural gas
 - (iii). The process of respiration

CHAPTER – 1

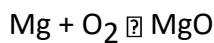
Chemical Reactions and Equations

Chemical Reaction : – Whenever a chemical change occurs we can say that a chemical reaction has taken place

- eg – Food gets digested in our body
- Rusting of iron.

q **Chemical Equation :** – A chemical reaction can be expressed symbolically by using chemical equation

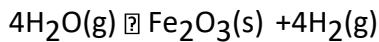
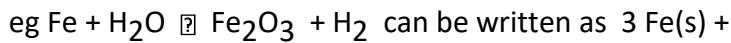
eg magnesium is burnt into air to form magnesium oxide can be represented as



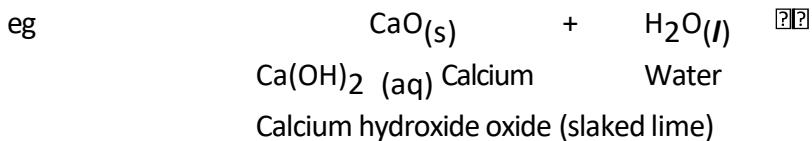
- We can observe or recognise a chemical reaction by observing change in state, colour, by evolution of gas or by change in temperature.

q Physical state of the reactant and products are mentioned to make chemical reaction more informative. eg we use (g) for gas, (l) for liquid, (s) for solid and (aq) for aqueous.

q **Balancing Equation :** – We balance the chemical equation so that no. of atoms of each element involved in the reaction remain same at the reactant and product side.

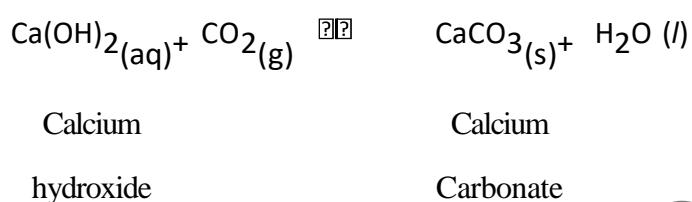


q **Combination Reaction :** – The reaction in which two or more substances combine to form a new single substance

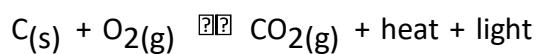


Quick lime

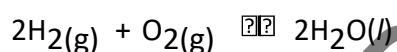
- Ca(OH)_2 slaked lime is used for white washing walls. It reacts with CO_2 to form CaCO_3 and gives a shiny finish to the walls.



- Burning of Coal



- Formation of water



q Exothermic Reactions :- Reaction in which heat is released along with the formation of products.



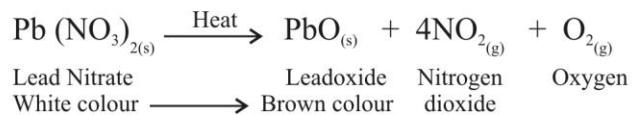
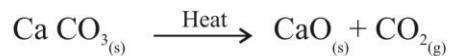
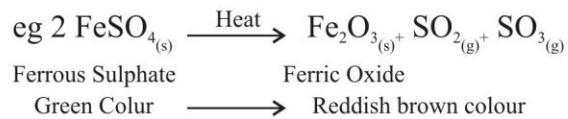
- Respiration is also exothermic reaction.
- Decomposition of vegetable matter into compost.

q De composition Reactions :- The reaction in which a single substance decomposes to give two or more substances. De composition reactions can be of three types

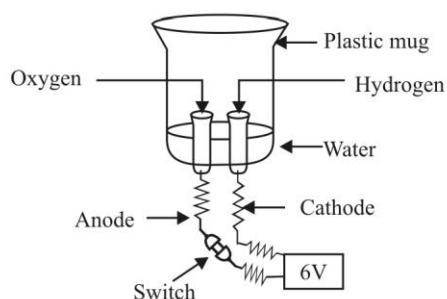
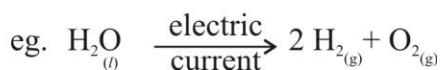
Thermal Decomposition :- When a decompositon reaction is carried out by heating

Decomposition Reactions

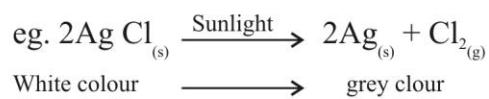
→ **Thermal Decomposition :-** When a decomposition reaction is carried out by heating



→ **Electrolytic Decomposition :-** When a decomposition reaction is carried out by electric current,



→ **Photolytic decomposition** :- When a decomposition reaction is carried out by light

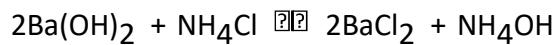


Silver bromide behaves similarly

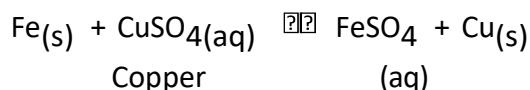


The above two reactions are used in black and white photography.

- **Endothermic Reactions** – The reactions which require energy in the form of heat, light or electricity are called Endothermic Reactions.



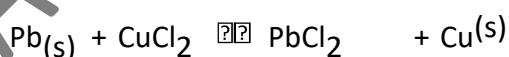
- **Displacement Reaction** : The chemical Reaction in which an element displaces another element from its solution



- The nail becomes brownish in colour and the blue colour of Copper Sulphate solution fade.
 - Other examples $\text{Zn(s)} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu(s)}$



Copper Zinc
Sulphate Sulphate

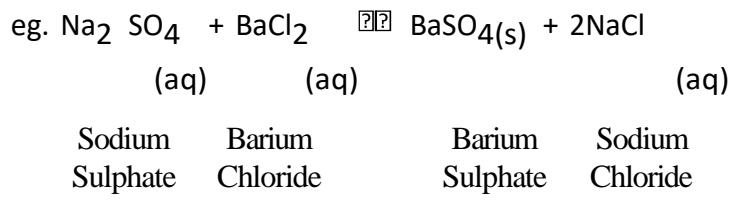


(aq) (aq)



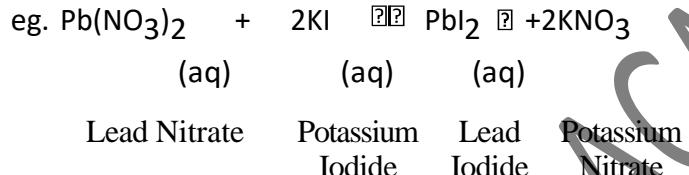
- Zinc and lead are more reactive elements than copper. They displace copper from its compounds.

- **Double Displacement Reaction** : The reaction in which two different atoms or group of atoms are mutually exchanged

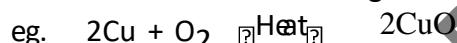


A white substance is formed due to above reaction. The insoluble substance is called precipitate.

Precipitation Reaction – Any reaction that produces a precipitate is called a precipitation reaction.



- Oxidation : Oxidation is the gain of oxygen or loss of hydrogen

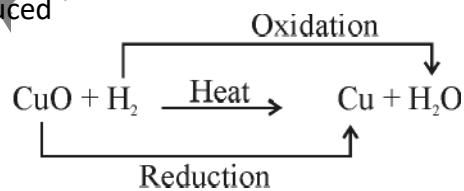


When Copper is heated a black colour appears. If this CuO is reacted with hydrogen gas then again Cu becomes brown as reverse reaction takes place



- **Reduction** : Reduction is the loss of oxygen or gain of hydrogen.

- **Redox Reaction** : The reaction in which one reactant gets oxidised while other gets reduced



- **Corrosion** : When a metal is attacked by substances around it such as moisture, acids etc.
 - eg. Reddish brown coating on iron.
 - (ii) Black coating on Silver.
- **Rancidity** : When fats and oils are oxidised they become rancid and their smell and taste change.
- Antioxidants are added to foods containing fats and oil.