Assignments in Science Class X

Topic: - Chemical Reactions and Equations

IMPORTANT NOTES

1. The changes which take place in substances can be broadly classified as **physical changes** and **chemical changes.**
2. **2.** During a **physical change,** only the state of the substance changes, but not its chemical composition. Furthermore, a physical change is a temporary change, which can be reversed by changing the physical experimental conditions. At the same time no net energy is absorbed or given out.
3. During a **chemical change,** the state as well as the chemical composition of a substance changes. Furthermore, a chemical change is a permanent change, which cannot be reversed by changing the physical experimental conditions. At the same time, either energy is absorbed or given out.
4. Whenever, a chemical change occurs, the process which takes place, is called a **chemical reaction.**
5. During a chemical reaction one or more of the following changes occur:
    A. Energy (generally in the form of heat or light) is either absorbed or given out.
    B. New substances are formed.
    C. The state of the reacting substances changes.
    D. There may be a change in colour of the reacting substances
    E. The temperature of the reacting substances changes.
    F. A gas may be evolved during the chemical reaction.
    G. The substances formed during a chemical reaction do not change back to the original substance, when the physical experimental conditions are altered.
6. A chemical equation which represents a chemical reaction briefly in words is called a **word equation.**
7. The substance/substances which take part in a chemical reaction are called **reactants**.
8. The new substance/substances formed as a result of chemical reactions, are called **products.**
9. A **plus sign** is put in between reactants or products, if their number is two or more.
10. **10.** An **arrow (⟶)** is put between reactants and products. This sign is read as **"to yield" or "to form".**
11. The **direction of the arrow** points in the direction in which the reaction proceeds.
12. **A chemical equation** is a statement that describes a chemical reaction in terms of symbols and formulae.

13. A chemical equation expressed in symbols and formulae, such that the number of atoms of different elements towards the side of the reactants is not equal to number of atoms of the same elements towards the side of the products, is called a **skeletal equation or an unbalanced equation.**

14. An unbalanced equation is **unacceptable or is no equation,** because, it goes against the law of conservation of mass.

15. A chemical equation in which the numbers of atoms of each element are same on the side of reactants and products is called a **balanced chemical equation.**

16. A balanced chemical equation tells us:

A. About the substances taking part in a chemical reaction and the products formed.
B. About the symbols and formulae of the reactants and products.
C. About the number of atoms or molecules of the reactants and products involved in the chemical reaction.
D. About the weights of the reactants and products involved in the chemical reaction.

17. A balanced chemical equation does not tell us:

A. The physical state of the reactants and products.
B. Whether the reaction will come to completion or not.
C. About the speed of the chemical reaction.
D. About the physical conditions which bring about the chemical reaction.
E. About changes, such as precipitation, change in colour, evolution of heat, light, etc., during the chemical reaction.

18. When one or more substances (elements or compounds) undergo a chemical change, with the absorption or release of energy (generally, heat energy) so as to form one or more products, then the change which takes place, is called a **chemical reaction.**

19. **Chemical composition reaction:** When two elements or compounds react chemically to form a single new compound, the chemical reaction which takes place is called a chemical composition reaction or a chemical combination reaction.

$$A + B \longrightarrow AB$$

20. **Chemical decomposition reaction :** When a chemical compound decomposes on heating or absorbing some other kind of energy, so as to form two or more new substances (elements or compounds), then the chemical reaction which takes place is called a chemical decomposition reaction or a chemical decombination reaction.

$$AB \longrightarrow A + B$$

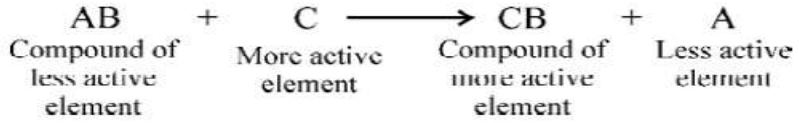
Chemical decomposition reaction can be further classified into three types.

A. Thermal decomposition reaction: When a chemical compound decomposes on heating so as to form one or more substances (elements or compounds), then the chemical reaction is called a thermal decomposition reaction.

B. **Photo-decomposition reaction:** When a chemical compound decomposes on absorbing light energy, so as to form two or more different substances, then the reaction which takes place is called a photo- decomposition reaction.

C. **Electrochemical reaction:** When a chemical compound in an aqueous or fused state decomposes into two different substances on the passage of electric current then the reaction is called an electrochemical reaction.

21. **Chemical displacement reaction:** When a more active element displaces a less active element from its aqueous ionic solution, the reaction which takes place is called a chemical displacement reaction.



22. Metals arranged in tabular form in the order of their decreasing chemical activity are called **metal activity series.**

K > Na > Ca > Mg > Al > Zn > Fe > Sn > Pb > [H] > Cu > Hg > Ag > Au.

The above list constitutes the metal activity series in which potassium is the most active metal and gold is the least active metal.

23. Chemical double displacement reaction :

A chemical reaction in which two ionic compounds in their aqueous solutions, react by exchanging their ions/radicals, to form two new compounds is called a chemical double displacement reaction.

$A^+B^- + C^+D^- \; A^+D^- + C^+B^-$.

Chemical double displacement reaction can be further classified into two kinds.

A. **Precipitation reaction:** When aqueous solutions of two ionic compounds react by exchanging their ions/radicals, to form two or more compounds, such that one of the products formed is an insoluble salt, and hence, forms a precipitate, the double displacement reaction is said to be a precipitation reaction.

B. **Neutralization reaction:** When an aqueous solution of an acid reacts with a base (alkali) by exchanging their ions/ radicals to form salt and water as the only products, the reaction which takes place is called a neutralisation reaction.

24. **Exothermic reactions:** A chemical reaction which proceeds with the release (evolution) of heat energy is called an exothermic reaction.
25. **Endothermic reaction:** A chemical reaction which proceeds with the absorption of heat energy is called an endothermic reaction.
26. **Oxidation reaction:** When a substance gains oxygen or loses hydrogen, the reaction taking place is called an oxidation reaction.
27. **Reduction reaction:** When a substance gains hydrogen or loses oxygen, the reaction taking place is called as reduction reaction.
28. **Corrosion of metals:** Formation of layers of undesired compounds, such as metallic oxides or hydroxides on the surface of metals is called a corrosion of metals.
29. **Rusting:** Slow conversion of iron into hydrated ferric oxide, in the presence of moisture and air is called rusting.
30. **Rust:** The flaky, non-sticky brown powder formed on the surface of iron, when iron is exposed to moist air, is called rust.
31. **Conditions for rusting:** Iron should be exposed to :

    (i) Water, (ii) air, at the same time.
32. **Rancidity:** The oxidation of food materials, so that they become stale and start smelling is called rancidity.

VERY SHORT ANSWER QUESTIONS

IMPORTANT QUESTIONS

1. State your observations when a clean magnesium strip is held in a Bunsen flame for some time.
2. Name the products formed when zinc granules are treated with dilute sulphuric acid.
3. What do you observe when a matchstick flame is brought near a tube containing hydrogen gas?
4. Write a balanced equation for chemical combination reaction in which a metal reacts with non-metal.
5. Write a balanced chemical equation for a photodecomposition reaction.
6. Write a balanced chemical equation for chemical combination reaction in which two compounds react.
7. When copper metal corrodes, a green deposit is formed on its surface. What is the chemical name and chemical formula of this green deposit?
8. What kind of chemical reaction takes place when electric current is passed through fused lead bromide? Support your answer by a chemical equation.
9. Write a balanced chemical equation for the chemical decomposition of copper carbonate.
10. Write a balanced equation for chemical composition reaction in which two non-metals react.
11. Why is aluminum called a self-protecting metal?
12. What kind of reaction takes place between dilute sulphuric acid and potassium hydroxide? Write fully balanced equation.
13. Write a chemical equation and state the kind of chemical reaction which takes place when ethane gas (C_2H_6) reacts with oxygen.
14. $CuO_{(s)} + H2_{(g)} \xrightarrow{heat} Cu_{(s)} + H_2O$ In the above reaction which reactant is oxidized and which reactant is reduced?
15. What kind of reaction takes place when sodium chloride solution is mixed with silver nitrate solution?
16. Why does copper reacts with silver nitrate solution?
17. Write a balanced equation for chemical combination reaction in which a compound reacts with an element.
18. What kind of reaction takes place when aluminium metal is placed in zinc sulphate solution? Support your answer by a chemical equation.

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. What change in colour is observed when white silver chloride is left exposed to sunlight? What type of chemical reaction is this?
2. Distinguish between an exothermic and an endothermic reaction. Amongst the following reactions, identify the exothermic reaction and the endothermic reaction.
(i) Heating coal in air to form carbon dioxide.
(ii) Heating limestone in a lime kiln to form quicklime.
3. Give an example of exothermic reaction.
4. What is meant by skeletal equation?
5. Why are bags of chips flushed with nitrogen gas?
6. What is thermite reaction?
7. What is the brown coloured gas evolved when lead nitrate crystals are heated in a dry test tube?

8. A compound is formed due to recrystallisation of sodium carbonate. Identify the compound and write its chemical formula.

9. Why do we apply paint on iron articles?

10. $N_2 + 3H_2 \longrightarrow 2NH_3$, name the type of reaction.

11. Give an example of double displacement reaction (only reaction with complete balanced equation).

12. Why are decomposition reaction called the opposite of combination reaction? Write equations for these reactions.

13. Write a balanced chemical equation to represent the following reaction. Carbon monoxide reacts with hydrogen gas at 340 atm. to form methyl alcohol.

14. Complete and balance the reaction: $Fe_2O_3 + Al \longrightarrow$

15. Which one is a chemical change–fermentation of fruit juice or diluting fruit juice?

16. Which one is chemical change–Electrolysis of water or sodium chloride exposed in sunlight?

17. Which one is a chemical change–Rusting of iron or melting of iron?

18. Which one is a chemical change–Melting of iron or corrosion of iron?

19. Balance the chemical equations:

$Pb(NO_{3)(s)} \xrightarrow{heat} PbO_{(s)} + NO_{2\,(g)} + O_{2\,(g)}$

20. Balance the chemical equations:

$MnO_2 + HCl_{(aq)} \longrightarrow MnC_{l2(aq)} + H_2O_{(l)} + Cl_{2(g)}$

21. Define Rancidity.

22. Name a reducing agent that may be used to obtain manganese from manganese dioxide.

23. On what basis is a chemical equation balanced?

24. Balance the given chemical equations: $Al_{(s)} + CuCl_{2(aq)} \longrightarrow AlCl_{3(aq)} + Cu_{(s)}$

25. Balance the given chemical equation: $FeSO_{4(s)} \xrightarrow{heat} Fe_2O_{3(s)} + SO_{2(g)} + SO_{3(g)}$

26. What happens chemically when quicklime is added to water?

27. Identify the type of reaction in the following example:

$Na_2SO_{4(aq)} + BaCl_{2(aq)} \longrightarrow BaSO_{4(s)} + 2NaCl_{(aq)}$

28. Identify the type of reaction in the following example

$Fe_{(s)} + CuSO_{4(aq)} \longrightarrow FeSO_{4(aq)} + Cu_{(s)}$

29. Identify the type of reaction in the following example:

$2H_{2(g)} + O_{2(g)} \longrightarrow 2H_2O_{(l)}$

30. Classify the following reactions into slow and fast reactions.

(i) Reaction between an acid and a base

(ii) Rusting of iron

SHORT ANSWER QUESTIONS–I

IMPORTANT QUESTIONS

1. (i) State two uses of chemical decomposition reaction in industry.

(ii) What kind of chemical reaction takes place during the digestion of food?

2. Correct the formulae and balance the following equation

$K_{(s)} + H_{2(l)} \longrightarrow KOH_{(aq)} + H_{2(g)}$

3. Write fully balanced chemical equation and state the physical condition and physical state of the reactants in the following reaction. Aluminum metal dissolves in aqueous copper sulphate solution with the formation of aluminium sulphate and copper.

(i) What do you understand by the following terms used in a chemical equation?
(a) Reactants
(b) products? (ii) What does symbol ( ) represent in a chemical equation?

4. Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? Is it a chemical or a physical change?

5. A substance X, which is an oxide of a group 2 element, is used intensively in the cement industry. This element is present in bones also. On treatment with water it forms a solution which turns red litmus blue. Identify X and also write the chemical reactions involved.

6. Which among the following are physical and chemical changes? **[HOTS]**
(a) Evaporation of petrol.
(b) Burning of Liquefied Petroleum Gas (LPG)
(c) Heating of an iron rod to red hot.
(d) Curdling of milk.
(e) Sublimation of solid ammonium chloride.

7. Zinc and aluminium are very high in metal activity series, yet they resist corrosion to a great extent. Explain.

8. Why are halides (chloride, bromide, and iodide) of silver kept in dark brown or black bottles?

9. Why do fire flies glow at night?

10. Give one example in case of following displacement reactions:
(i) When a more active metal displaces a less active metal from its aqueous salt solution.
(ii) When an active metal displaces hydrogen from dilute acid.

11. (i) $Fe_{(s)} + ZnSO_{4(aq)} \longrightarrow FeSO_{4(aq)} + Zn_{(s)}$
(ii) $Mg_{(s)} + ZnSO_{4(aq)} \longrightarrow MgSO_{4(aq)} + Zn_{(s)}$.
Which amongst the above reaction will not proceed and why?

12. Brightly polished iron nails are placed in copper nitrate solution. Describe all that you will observe after one hour.

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. When the powder of a common metal is heated in an open china dish, its colour turns black. However, when hydrogen is passed over the hot black substance so formed, it regains its original colour. Based on the above information answer the following questions:
(i) What type of chemical reaction takes place in each of the two given steps?
(ii) Name the metal initially taken in the powder form. Write balanced chemical equations for both reactions.

2. "Oxidation and reduction processes occur simultaneously." Justify this statement with the help of an example.

3. "Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate"
(i) Translate the above statement into a chemical equation.
(ii) State two types in which this reaction can be classified.

4. "A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed".
(i) Translate the above statement into a chemical equation.
(ii) State two types in which this reaction can be classified.

5. Write the chemical name and formula of common salt. State how sodium hydroxide is prepared using this salt.

6. Why do we store silver chloride in dark coloured bottle? Explain in brief.

7. What is meant by thermal decomposition reaction? Explain with an example.

8. An aluminium can is used to store ferrous sulphate solution. It is observed that in few days holes appeared in the can. Explain the observation and write chemical equation to support your answer.

9. (i) Define photochemical reaction.

(ii) Write the balanced equation for the following reaction and identify the type of reaction.

Potassium bromide + Barium Iodide

Potassium iodide + Barium bromide

10. Write balanced equations for the reaction of:

(i) Iron with steam (ii) Calcium with water.

11. What would you observe when zinc is added to a solution of iron (II) sulphate? Name the type of reaction and write th chemical equation.

12. Write the balanced chemical equation for the following reaction and write the name of the reaction:

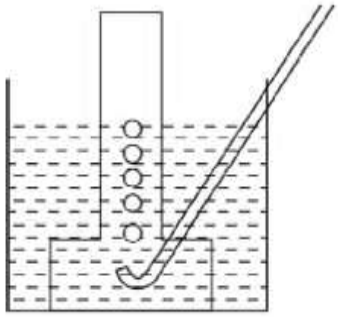
Barium chloride + Aluminium sulphate

Barium sulphate + Aluminium chloride.

13. A metal A, which is used in thermite process, when heated with oxygen gives an oxide B, which is amphoteric in nature. Identify A and B. Write down the reactions of oxide B with HCl and NaOH.

14. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity.

15. A metal is treated with dil. H_2SO_4, the gas evolved is collected by the method shown in the figure. Answer the following:



(i) Name the gas.

(ii) Name the method of collection of the gas.

(iii) Is the gas soluble or insoluble in water?

(iv) Is the gas lighter or heavier than air?

16. Crystals of a substance changed their colour on heating in a closed vessel but regained it after sometime, when they were allowed to cool down.

(a) Name one such substance.

(b) Explain the phenomenon involved.

17. A white solid when dropped in water produces a hissing sound. What the solid may be? Give the chemical reaction for above. Name the product formed.

18. Write observation with reaction for the following: granulated zinc reacts with dil. sulphuric acid.

19. What happens when an iron nail is put inside copper sulphate solution? Write reaction with observation.

20. What do you see when pentahydrated copper sulphate crystals are heated? Give reaction too.

21. Give an example each for thermal decomposition and photochemical decomposition reactions. Write relevant balanced chemical equations also.

22. Write the balanced chemical equation for the chemical reaction between manganese dioxide and aluminium powder. What happens if manganese powder is heated with aluminium oxide?

23. With the help of suitable example, explain oxidation and reduction in terms of gain or loss of oxygen.

24. Define double displacement reaction with the help of an example.

25. Respiration is considered as exothermic reaction. Explain why?

26. What are exothermic and endothermic reactions? Explain with the help of one example each.

27. A shiny brown coloured element X on heating in air becomes black in colour. Name the element X and the black coloured compound formed. Write the chemical equation for the reaction.

28. Arrange iron, copper and zinc in increasing order of reactivity on the basis of following reactions. Give reasons.

$Fe_{(s)} + CuSO_{4(aq)} \longrightarrow FeSO_4 + Cu_{(s)}$

$Zn_{(s)} + FeSO_{4(aq)} \longrightarrow ZnSO_{4(aq)} + Fe_{(s)}$

29. What is corrosion? Give two methods to protect iron articles from corrosion.

30. What is an oxidation reaction? Give an example of oxidation reaction. Is oxidation an exothermic or an endothermic reaction?

31. (a) What is the colour of ferrous sulphate crystals? How does this colour change after heating?
(b) Name the products formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?

32. Define a combination reaction. Give one example of a combination reaction which is also exothermic.

33. (i) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?
(ii) What type of reaction is this?
(iii) Write a balanced chemical equation to represent the above reaction.

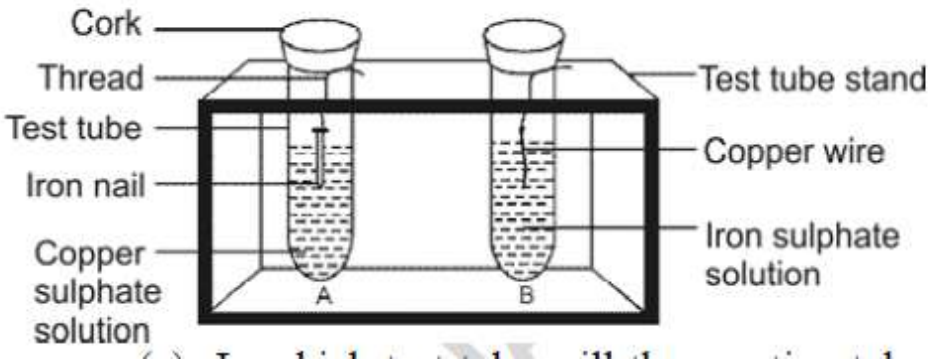
34. Crystals of copper sulphate are heated in a test tube for some time. What is the colour of copper sulphate crystals?
(i) Before heating, and (b) after heating?

35. What is a redox reaction? When a magnesium ribbon burns in air with a dazzling flame and forms a white ash, is magnesium oxidised or reduced? Why?

36. When magnesium ribbon burns in air or oxygen, a product is formed. State the type of chemical reaction and name the product formed in the reaction. Write balanced chemical equation of this reaction.

37. State any two observations in an activity which may suggest that a chemical reaction has taken place. Give examples to support your answer.

38. Observe the two test tubes A and B in the diagram given below and answer the following questions:



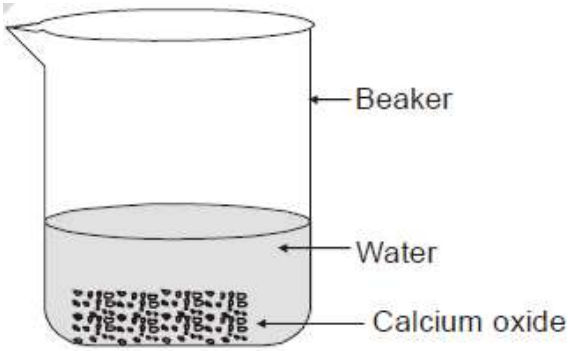
(a) In which test tube will the reaction takes place?

(b) Write a balanced equation of the reaction.

(c) Name the type of reaction.

39. Solid calcium oxide was taken in a container and water was slowly added to it.

(i) State the two observations made in the experiment.



(ii) Write the name and chemical formula of the product formed.

40. What is an oxidation reaction? Identify in the following reaction:

$ZnO + C \longrightarrow Zn + CO$

(i) The substance oxidised and (ii) The substance reduced

41. Give an example of a decomposition reaction. Describe an activity to illustrate such a reaction by heating.

SHORT ANSWER QUESTIONS

IMPORTANT QUESTIONS

1. What conclusions can be drawn from the chemical reaction between zinc and dilute sulphuric acid?

2. (i) What do you understand by chemical double displacement reaction?

(ii) By giving one chemical equation write:

(a) Precipitation reaction (b) Neutralisation reaction

3. State the reactions, if any of the following metals react with lead nitrate solution. In case the reaction takes place, support it by a chemical equation.

(a) Silver, (ii) zinc, (iii) copper, and (iv) iron.

4. What is galvanised iron? How is galvanised iron protected from rust?

5. How will you show that iron is more reactive than copper?

6. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphate, a white precipitate is obtained.

(a) Write a balanced chemical equation of the reaction involved.
(b) What other name can be given to this precipitation reaction?
(c) On adding dilute hydrochloric acid to the reaction mixture the white precipitate disappears. Why?

7. Identify the reducing agent in the following reactions.
(a) $4NH_3 + 5O_2 \longrightarrow 4NO + 6H_2O$
(b) $Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$

8. What happens when a piece of:
(a) Zinc metal is added to copper sulphate solution?
(b) aluminium metal is added to dilute hydrochloric acid?
(c) Silver metal is added to copper sulphate solution?
Also, write balanced chemical equation if the reaction occurs.

9. Which among the following changes are exothermic or endothermic in nature?
(a) Decomposition of ferrous sulphate.
(b) Dissolution of sodium hydroxide in water
(c) Dissolution of ammonium chloride in water

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. Name the products formed in each case when:
(a) Hydrochloric acid reacts with caustic soda.
(b) Granulated zinc reacts with caustic soda.
(c) Carbon dioxide is passed into lime water.

2. Design an activity to show decomposition reaction in which light is used to decompose a reactant. Write chemical equation of the reaction and state its one use.

3. Draw a labeled schematic diagram to show the electrolysis of water. Why is the amount of gas collected in one of the test tubes in this activity double of the amount collected in the other?

4. Give three differences between displacement and double displacement reaction.

5. A, B and C are three elements which undergo chemical reactions according to the following equations.

$A_2O_3 + 2B \longrightarrow B_2O_3 + 2A$
$3CSO_4 + 2B \longrightarrow B_2(SO_4) + 3C$
$3CO + 2A \longrightarrow A_2O_3 + 3C$

Answer the following questions with reasons:
(a) Which element is the most reactive?
(b) Which element is the least reactive?
(c) What is the type of reactions listed above?

6. In the electrolysis of water;
(i) Name the gas collected at the cathode and anode.
(ii) Why is the volume of gas collected at one electrode double the other?
(iii) Why are a few drops of dil H_2SO_4 added to the water?

7. Describe an activity to show that rusting of iron requires air and water.

8. Write the balanced equation involved, when:
(i) chlorine is passed over dry slaked lime.
(ii) sodium bicarbonate reacts with dilute hydrochloric acid

(iii) sodium bicarbonate is heated.

9. Account for the following:

(a) Aluminium is more reactive than iron, but its corrosion is less than iron.

(b) Hydrogen gas is not evolved when zinc metal reacts with dil. HNO_3.

(c) Carbon is not used for reducing aluminium from aluminium oxide.

10. (a) What is thermite reaction? How it is used in joining railway tracks and cracked parts of machines.

(b) How do we get stainless steel?

11. Salt A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water and a gas C is evolved. The gas C when passed through lime water, turns it milky. Identify A, B and C. Write balanced chemical equations for each step.

12. Write the balanced chemical equations for the following reactions:

(a) Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogen carbonate.

(b) Sodium hydrogen carbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.

13. Take a small amount of calcium oxide or quick lime in a beaker and slowly add water to this:

(a) Is there any change in temperature?

(b) What type of reaction is taking place?

(c) Write chemical equation for above reaction.

14. (a) Define 'water of crystallisation'.

(b) Give two examples of substances having water of crystallisation. Write their molecular formulae also.

15. Name the type of chemical reaction presented by the following equations.

(i) $CaCO_{3(s)} \xrightarrow{heat} CaO_{(s)} + CO_{2(g)}$

(ii) $CaO_{(s)} + H_2O_{(l)} \longrightarrow Ca(OH)_{2\,(aq)}$

(iii) $Zn_{(s)} + H2SO_{4(aq)} \longrightarrow ZnSO_{4\,(aq)} + H_{2(g)}$

16. Identify the substances that are oxidised and that are reduced in the following reactions.

(a) $ZnO + C \longrightarrow Zn + CO$

(b) $CuO + H_2 \longrightarrow Cu + H_2O$

(c) $MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_2O + Cl_2$

LONG ANSWER QUESTIONS

IMPORTANT QUESTIONS

1. State the characteristics of a chemical reaction.

2. State the limitations of a balanced chemical equation.

3. Give examples of articles made from iron which are protected from rusting by:

(i) Red lead paint

(ii) Paint

(iii) Enamelling

(iv) Plastic coating

(v) Tinning

(vi) Electroplating

(vii)Galvanising
(viii) Tarring
(ix) Alloying
(x) Oiling and greasing

4. (i) On heating a blue coloured powder of copper (II) nitrate in a boiling tube, copper oxide (black), oxygen gas and a brown gas X is formed
(a) Write a balanced chemical equation of the reaction.
(b) Identify the brown gas X evolved.
(c) Identify the type of reaction.
(d) What could be the pH range of the aqueous solution of gas X?

(ii) Give the characteristic test for the following gas.
(a) CO_2
(b) SO_2
(c) O_2

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. (i) Account for the following.
(a) White silver chloride turn grey in sunlight.
(b) Brown coloured copper powder on heating in air turns into black coloured substance.

(ii) What do you mean by?
(a) Displacement reaction
(b) reduction reaction
(c) combination reaction? Write balanced chemical equation.

2. (i) Solid calcium oxide was taken in a container and water was added slowly to it:
(a) Write the observation
(b) write the chemical formula of the product formed.

(ii) What happens when carbon dioxide gas is bubbled through lime water?
(a) in small amount
(b) in excess

3. (a) What happens chemically when quick lime is added to water?
(a) Balance the following chemical equatio $MnO_2 + HCl \longrightarrow MnCl_2 + Cl + H_2O$
(c) What is decomposition reaction? Explain it with suitable example.

4. (a) Balance the chemical equation$Fe(s) + H_2O(g) \longrightarrow Fe_3O_4(s) + H_2(g)$

(b) Identify the type of reaction in the equation given below.
$Na_2SO_{4(aq)} + BaCl_{2(aq)} \longrightarrow BaSO_4\ (s) + NaCl(aq)$

(c) You could have noted that when copper powder is heated in a china dish, the surface of copper powder becomes coated with black colour substance.
(i) Why has this black coloured substance formed?
(ii) What is the black substance?
(iii) Write the chemical equation of the reaction take place.

5. A student dropped few pieces of marble in dilute hydrochloric acid, contained in a test tube. The evolved gas was then passed through lime water. What change would be observed in lime water? What will happen if excess of gas is passed through lime water? Write balanced chemical equations for all the changes observed

7. Observe the given figure and answer the following questions.

(i) Write the complete balanced reaction for the above.

(ii) Type of reaction involved.

(iii) Is there any precipitate formed?

(iv) If any precipitate formed, write the colour of the precipitate.