Year 2024

Multiple choice questions [1 marks]

1) Select from the following a decomposition reaction in which source of energy for decomposition is light : **[(31/1/1); (31/1/2); (31/3/3)]**
   (a) $2FeSO_4 \longrightarrow Fe_2O_3; + SO_2 + SO_3$
   (b) $2H_2O \longrightarrow 2H_2 + O_2$
   (c) $2AgBr \longrightarrow 2Ag + Br_2$
   (d) $CaCO_3 \longrightarrow CaO + CO_2$

2) Consider the following compounds :**[(31/1/1); (31/1/2); (31/3/3)]**
   $FeSO_4$; $CuSO_4$; $CaSO_4$; Na_2CO_3
   The compound having maximum number of water of crystallisation in its crystalline form in one molecule is :
   (a) $FeSO_4$ (b) $CuSO_4$ (c) $CaSO_4$ (d) Na_2CO_3

3) $MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_2O + Cl_2$ **[(31/1/1); (31/1/2); (31/3/3)]**
   The reaction given above is a redox reaction because in this case :
   (a) MnO_2 is oxidised and HCl is reduced.
   (b) HCl is oxidised.
   (c) MnO_2 is reduced.
   (d) MnO_2 is reduced and HCl is oxidised.

4) Select from the following a process in which a combination reaction is involved : **[(31/2/1); (31/2/2); (31/2/3)]**
   (a) Black and White photography (b) Burning of coal (c) Burning of methane (d) Digestion of food

5) Identify the correct statement about the following reaction : **[(31/2/1); (31/2/2); (31/2/3)]**
   $2H_2S + SO_2 \longrightarrow 2H_2 + S$
   (a) H_2S is oxidising agent and SO_2 is reducing agent.
   (b) H_2S is reduced to sulphur.
   (c) SO_2 is oxidising agent and H_2S is reducing agent.
   (d) SO_2 is oxidised to sulphur.

6) An iron nail is placed in a solution of copper sulphate. The nail is taken out after 15 minutes. The nail will be found to be covered with : **[(31/2/3)]**
   (a) blue deposit (b) brown deposit (c) grey deposit (d) green deposit

7) Consider the following cases : **[(31/2/3)]**
   (a) $CaSO_4 + Al \longrightarrow$
   (b) $CuSO_4 + Ca \longrightarrow$
   (c) $FeSO_4 + Cu \longrightarrow$
   (d) $ZnSO_4 + Mg \longrightarrow$
   The cases in which new products will form are —
   (a) a and b (b) b and c (c) c and d (d) b and d

8) Which of the following reactions is an endothermic reaction ? **[(31/2/3)]**
   (a) Burning of coal
   (b) Decomposition of vegetable matter into compost
   (c) Process of respiration
   (d) Decomposition of calcium carbonate to form quick lime and carbondioxide.

9) $CaCO_3 \longrightarrow$ 'X' $+ CO_2$ **[(31/3/1); (31/3/2) ; (31/3/3)]**
   (a) Quick lime (b) Gypsum (c) Lime Stone (d) Plaster of Paris

10) Consider the following Chemical equation : **[(31/3/1); (31/3/2)]**
    $a\ Al_2O_3 + bHCl \longrightarrow c\ AlCl_3 + dH_2O$

In order to balance this chemical equation, the values of a, b, c and d must be
(a) 1, 6, 2 and 3 (b) 1, 6, 3 and 2 (c) 2, 6, 2 and 3 (d) 2, 6, 3 and 2

11) Which one of the following reactions is different from the remaining three ? **[(31/3/1); (31/3/2); (31/3/3)]**
(a) $NaCl + AgNO_3 \longrightarrow AgCl + NaNO_3$
(b) $CaO + H_2O \longrightarrow Ca(OH)_2$
(c) $KNO_3 + H_2SO_4 \longrightarrow KHSO_4 + HNO_3$
(d) $ZnCl_2 + H_2S \longrightarrow ZnS + 2HCl$

12) The products obtained when Lead nitrate is heated in a boiling tube.
(a) PbO, N_2O and O_2 (b) NO, PbO and O_2 (c) $Pb(NO_2)_2$ and O_2 (d) NO_2, PbO and O_2 **[(31/3/3)]**

13) $Zn + 2CH_3COOH \longrightarrow (CH_3COO)_2Zn + H_2$ **[(31/4/1); (31/4/3)]**
The above reaction is a :
(a) Decomposition reaction
(b) Displacement reaction
(c) Double displacement reaction
(d) Combination reaction

14) A chemical reaction in which exchange of ions occurs between the reactants, is known as : **[(31/4/2)]**
(a) Endothermic Reaction
(b) Exothermic Reaction
(c) Double Displacement Reaction
(d) Displacement Reaction

15) To balance the following chemical equation, the values of the coefficients x, y and z must be respectively : **[(31/5/1); (31/5/3)]**
$x\ Zn(NO_3)_2 \longrightarrow y\ ZnO + z\ NO_2 + O_2$
(a) 4, 2, 2 (b) 4, 4, 2 (c) 2, 2, 4 (d) 2, 4, 2

16) Which of the following is a redox reaction, but not a combination reaction ? **[(31/5/1); (31/5/2); (31/5/3)]**
(a) $C + O_2 \longrightarrow CO_2$
(b) $2H_2 + O_2 \longrightarrow 2H_2O$
(c) $2Mg + O_2 \longrightarrow 2MgO$
(d) $Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$

17) Which of the following is not a thermal decomposition reaction ? **[(31/5/2)]**
(a) $2FeSO_4 \longrightarrow Fe_2O_3 + SO_2 + SO_3$
(b) $CaCO_3 \longrightarrow CaO + CO_2$
(c) $2\ AgCl \longrightarrow 2\ Ag + Cl_2$
(d) $Pb(NO_3)_2 \longrightarrow 2\ PbO + 4\ NO_2 + O_2$

Assertion and Reasoning [1 Mark]

These consist of two statements —Assertion(A) and Reason(R). Answer these questions selecting the appropriate option given below:
(a) Both Assertion(A) and Reason(R) are true and Reason(R) is the correct explanation of the Assertion(A).
(b)Both Assertion(A) and Reason(R) are true, but Reason(R) is not the correct explanation of the Assertion(A).
(c)Assertion(A) is true, but Reason(R) is false.
(d)Assertion(A) is false,but Reason(R) is true.

1) Assertion (A): A piece of Zinc metal gets reddish brown coating when kept in copper sulphate solution for some time.
Reason (R) : Copper is more reactive metal than Zinc. **[(31/5/2)]**

Very Short Answer Type Questions [2 Marks]

1) Name the type of chemical reaction in which calcium oxide reacts with water. Justify your answer by giving balanced chemical equation for the chemical reaction. **[(31/1/1)]**
2) Translate the following statements into chemical equations and then balance them :
(i) Solution of barium chloride and aluminium sulphate in water react to give insoluble barium sulphate and the solution of aluminium chloride.
(ii) Aluminium metal reacts with steam to give aluminium oxide and hydrogen gas. **[(31/1/2)]**
3) Translate the following statement into a balanced chemical equation.
"When barium chloride reacts with aluminium sulphate, aluminium chloride and barium sulphate are formed."
State the type of this reaction giving reason to justify your answer. **[(31/1/3)]**
4) "No precipitation reaction can occur without exchange of ions between the two reactants." Justify this statement giving a balanced chemical equation for the reaction. **[(31/2/1)]**
5) Giving one example of each, differentiate between a displacement reaction and a double displacement reaction. **[(31/2/1)]**
6) Define a decomposition reaction. Write an equation to show thermal decomposition of ferrous sulphate crystals. **[(31/2/2)]**
7) What is meant by a balanced chemical equation ? Why is it necessary for the equation to be balanced ? **[(31/2/2)]**
8) Give one example of each of the following :
(i) Chemical reaction showing evolution of gas.
(ii) Change in the colour of the substance during a chemical reaction. **[(31/2/3)]**
9) Translate the following statements into chemical equations and then balance them :
(i) Hydrogen sulphide gas burns in air to give water and sulphurdioxide.
(ii) Silver bromide on exposure to sunlight decomposes into silver and bromine.**[(31/2/3)]**
10) When magnesium ribbon is burnt in air, an ash of white colour is produced. Write chemical equation for the reaction giving the chemical name of the ash produced. State the type of chemical reaction giving justification for your answer. **[(31/3/1)]**
11) When a few drops of Barium chloride solution are added to an aqueous solution of Sodium sulphate, a white precipitate is obtained.
(a) Write balanced chemical equation for the reaction involved.
(b) What is the other name of this precipitation reaction ? Why is it called so ? **[(31/3/2)]**
12) (a) Write the essential conditions for following reaction to take place and name its types :
$2AgCl \longrightarrow 2Ag + Cl_2$
(b) Complete the following chemical reaction in the form of a balanced equation
$FeSO_4 \xrightarrow{\triangle} Fe_2O_3 +$ …… $+$ ……. **[(31/3/3)]**
13) Copper powder is taken in a china dish and heated over a burner. Name the product formed and state its colour. Write the chemical equation for the reaction involved. **[(31/5/1); (31/5/2); (31/5/3)]**
14) Write chemical equation for the chemical reaction which occurs when the aqueous solutions of barium chloride and sodium sulphate react together. Write the symbols of the ions present in the compound precipitated in the reaction. **[(31/5/1); (31/5/2); (31/5/3)]**

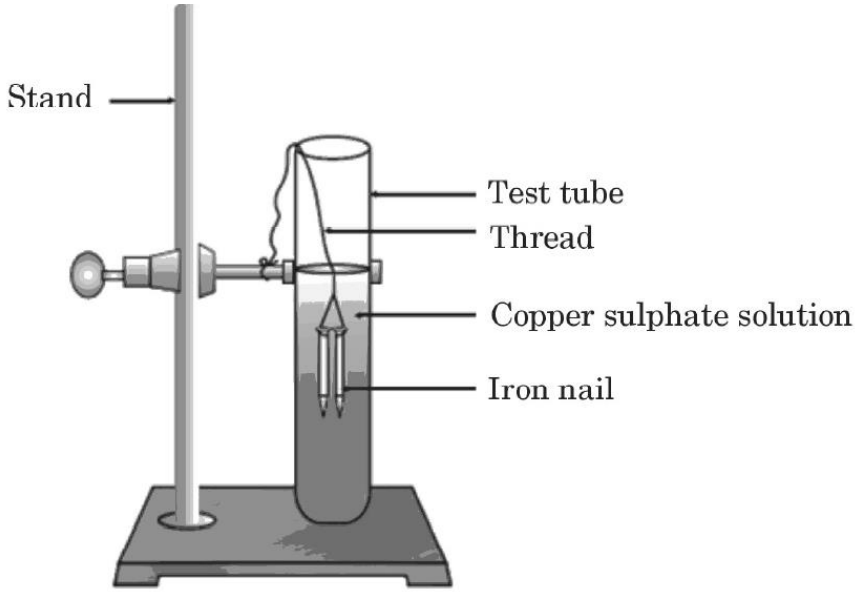
Short Answer Type Question [3 Marks]

1) Write one chemical equation each for the chemical reaction in which thefollowing have taken place :
(i) Change in colour
(ii) Change in temperature
(iii) Formation of precipitate
Mention colour change/temperature change (rise/fall)/compound precipitated along with equation. **[(31/1/1); (31/1/2); (31/1/3)]**

2) (i) Define a decomposition reaction. Write chemical equation for the reaction that occurs when lead nitrate is heated strongly in a boiling tube.
(ii) In electrolytic decomposition of water two gases are liberated at the electrodes. Give the mass ratio of the gas liberated at the cathode and at the anode. **[(31/1/3)]**

3) State any two observations when an electric current is passed through acidulated water, in a container having each electrode covered by test tubes filled with water. Write the ratio of the mass of the gas collected at the cathode to the mass of the gas collected at the anode.**[(31/2/2)]**

4)



Study the experimental set-up shown in the diagram and write chemical equation for the chemical reaction involved. Name and define the type of reaction. List two other metals which can be used in place of iron to show the same type of reaction with copper sulphate solution. **[(31/5/1); (31/5/2)]**

5) Answer the following questions in the context of electrolysis of water : **[(31/5/3)]**
(a) Why is this reaction/process called a decomposition reaction ?
(b) Giving reason state whether this reaction is exothermic or endothermic.
(c) Name the gases collected at the anode and cathode.
(d) What is the mass ratio of the gases collected at the anode and cathode ?

Long Answer Type Question [5 Marks]

1) What is a chemical reaction ? Describe one activity each to show that a chemical change has occurred in which (i) change of colour, and (ii) change in temperature has taken place. **[(31/4/1)]**

2) (i) Define a decomposition reaction. How can we say that (I) electrolysis of water, and (II) blackening of silver bromide when exposed to sunlight, are decomposition reactions ? Mention the type of energy involved in each case.
(ii) The type of reactions in which (I) calcium oxide is formed, and (II) calcium hydroxide is formed are opposite reactions to each other. Justify this statement with the help of chemical equations. **[(31/4/1)]**

3) When lead nitrate is heated strongly in a boiling tube, two gases are liberated and a solid residue is left behind in the test tube.
(i) Name the type of chemical reaction and define it.
(ii) Write the name and formula of the coloured gas liberated.
(iii) Write the balanced chemical equation for the reaction.
(iv) Name the residue left in the test tube and state the method of testing its nature (acidic/basic). **[(31/4/2)]**

4) (i) Write balanced chemical equation for the following word equation.
Lead nitrate + Potassium iodide Lead iodide + Potassium nitrate
Is this a double displacement reaction ? Justify your answer.
Name the compound precipitated and write the ions present in it.
(ii) Write the method of preparation of $Ca(OH)_2$. What happens when CO_2 is passed through it ? Write balanced chemical equation for the reaction involved. **[(31/4/2)]**

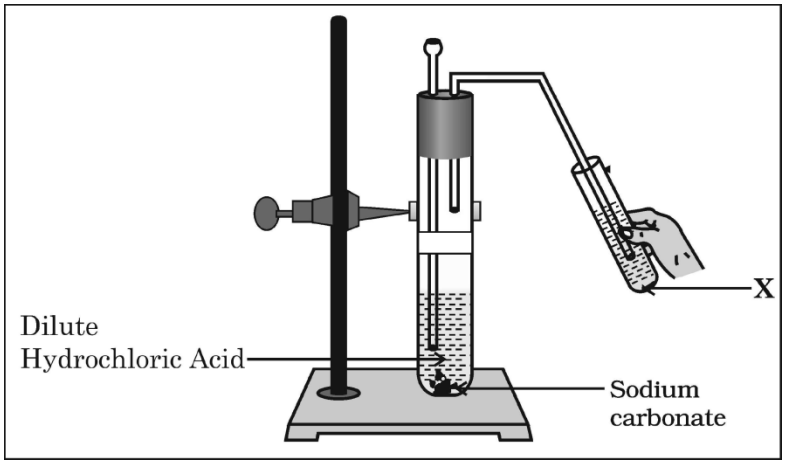
5) What is a chemical reaction ? Describe one activity each to show that a chemical change has occurred in which (i) change of colour, and (ii) change in temperature has taken place. **[(31/4/3)]**

6) (i) Define a decomposition reaction. How can we say that (I) electrolysis of water, and (II) blackening of silver bromide when exposed to sunlight, are decomposition reactions ? Mention the type of energy involved in each case.
(ii) "The type of reactions in which (I) calcium oxide is formed, and (II) calcium hydroxide is formed are opposite reactions to each other." Justify this statement with the help of chemical equations. **[(31/4/3)]**

Year 2023

Multiple choice questions [1 marks]

1) In the experimental setup given below, it is observed that on passing the gas produced in the reaction in the solution 'X' the solution 'X' first turns milky then colourles



[(31/1/1); (31/1/2); (31/3/3)]

The option that justifies the above stated observation is that 'X' is aqueous calcium hydroxide and

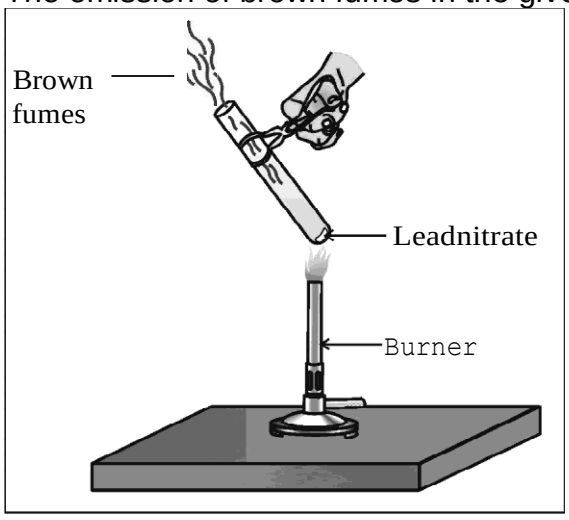
(a)it turns milky due to carbon dioxide gas liberated in the reaction and after sometime it becomes colourless due to formation of calcium carbonate.

(b) it turns milky due to formation of calcium carbonate and on passing excess of carbon dioxide it becomes colourless due to formation of calcium hydrogen carbonate which is soluble in water.

(c) it turns milky due to passing of carbon dioxide through it. It turns colourless as on further passing carbon dioxide, sodium hydrogen carbonate is formed which is soluble in water.

(d) the carbondioxide liberated during the reaction turns lime water milky due to formation of calcium hydrogen carbonate and after sometime it turns colourless due to formation of calcium carbonate which is soluble in water.

2) The emission of brown fumes in the given experimental set-up is due



[(31/1/1); (31/1/2); (31/3/3)]

(a) thermal decomposition of lead nitrate which produces brown fumes of nitrogen dioxide.

(b) thermal decomposition of lead nitrate which produces brown fumes of lead oxide.

(c) oxidation of lead nitrate forming lead oxide and nitrogen dioxide.

(d) oxidation of lead nitrate forming leadoxide and oxygen.

3) $MnO_2 + xHCl \longrightarrow MnCl_2 + yH_2O + zCl_2$ **[(31/1/1); (31/1/2); (31/3/3)]**
In order to balance the above chemical equation, the values of x, y and z respectively are:
(a) 6, 2, 2 (b) 4, 1, 2 (c) 4, 2, 1 (d) 2, 2, 1

4) Select endothermic reaction from the following: **[(31/1/2)]**
(a) Decomposition of vegetable matter into compost.
(b) Decomposition of calcium carbonate to form quick lime and carbon dioxide.
(c) Burning of a candle.
(d) Process of respiration.

5) Which of the following is an example of endothermic process?**[(31/2/1)]**
(a) Formation of slaked lime
(b) Decomposition of vegetable matter into compost
(c) Dissolution of ammonium chloride in water
(d) Digestion of food in our body

6) Inordertobalancethefollowingchemicalequation,thevaluesofthecoefficientsxandyrespectivelyare: **[(31/2/1); (31/2/2)]**
$xPb(NO_3)_2 \xrightarrow{Heat} 2PbO + yNO_2 + O_2$
(a) 2,4 (b) 2,2 (c) 2,3 (d) 4,2

7) During electrolysis of water, if the volumes of oxygen and hydrogen evolved at the electrodes are V_O and V_H respectively, then V_O/V_H is **[(31/2/2)]**
(a) 4 (b) 2 (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

8) When aqueous solutions of potassium iodide and lead nitrate are mixed, an insoluble substance separates out. The chemical equation for the reaction involved is : **[(31/4/1); (31/4/2); (31/4/3)]**
(a) $KI + PbNO_3 \longrightarrow PbI + KNO_3$
(b) $2KI + Pb(NO_3)_2 \longrightarrow PbI_2 + 2KNO_3$
(c) $KI + Pb(NO_3)_2 \longrightarrow PbI + KNO_3$
(d) $KI + Pb(NO_3)_2 \longrightarrow PbI_2 + KNO_3$

9) A metal ribbon 'X' burns in oxygen with a dazzling white flame forming a white ash 'Y'. The correct description of X, Y and the type of reaction is : **[(31/4/1); (31/4/2); (31/4/3)]**
(a) X = Ca ; Y = CaO ; Type of reaction = Decomposition
(b) X = Mg ; Y = MgO ; Type of reaction = Combination
(c) X = Al ; Y = Al_2O_3 ; Type of reaction = Thermal decomposition
(d) X = Zn ; Y = ZnO ; Type of reaction = Endothermic

10) Study the following chemical reaction : **[(31/5/1); (31/5/2); (31/5/3)]**
$2Na(s) + 2H_2O(l) \longrightarrow 2NaOH(aq) + H_2(g)$
The reducing agent in this reaction is :
(a) Na (b) H_2O (c) NaOH (d) H_2

11) The balanced chemical equation showing reaction between quicklime and water is :**[(31/5/1); (31/5/2); (31/5/3)]**
(a) $2CaO + H_2O \longrightarrow 2CaOH + H_2 + Heat$
(b) $CaO + H_2O \longrightarrow Ca(OH)_2 + H_2 + Hea$
(c) $CaO + H_2O \longrightarrow Ca(OH)_2 + Heat$
(d) $2CaO + 3H_2O \longrightarrow 2Ca(OH)_3 + O_2 + Heat$

12) Select the appropriate state symbols of the products given as X and Y in the following chemical equation by choosing the correct option from table given below :
$Zn(s) + H_2SO_4(l) \longrightarrow ZnSO_4(X) + H_2(Y)$ **[(31/6/1); (31/6/3)]**

	(X)	(Y)
(a)	(s)	(l)
(b)	(aq)	(g)
(c)	(aq)	(s)
(d)	(g)	(aq)

13) Consider the following chemical equation I and II **[(31/6/1); (31/6/2);(31/6/3)]**
I. $Mg + 2HCl \longrightarrow MgCl_2 + H_2$
II. $NaOH + HCl \longrightarrow NaCl + H_2O$
The correct statement about these equations is —
(a) 'I' is a displacement reaction and 'II' is a decomposition reaction.
(b) 'I' is a displacement reaction and 'II' is double displacement reaction.
(c) Both 'I' and 'II' are displacement reactions.
(d) Both 'I' and 'II' are double-displacement reactions.

14) To balance the following chemical equation the values of x and y should respectively be
$2NaOH + xAl_2O_3 \longrightarrow yNaAlO_2 + H_2O$
(a) 1,4 (b) 1,2 (c) 2,4 (d) 2,3

Assertion and Reasoning [1 Mark]

These consist of two statements —Assertion (A) and Reason(R). Answer these questions selecting the appropriate option given below:
(a) Both (A) and (R) are true and (R) is the correct explanation of (A).
(b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
(c) (A) is true, but (R) is false.
(d) (A) is false, but (R) is true.

1) Assertion (A): The colour of aqueous solution of copper sulphate turns colourless when a piece of lead is added to it. **[(31/1/1);(31/1/2); (31/1/3)]**
Reason(R): Lead is more reactive than copper, and hence displaces copper from its salt solution.

2) Assertion (A) : Reaction of Quicklime with water is an exothermic reaction.**[(31/4/1); (31/4/2); (31/4/3)]**
Reason (R) : Quicklime reacts vigorously with water releasing a large amount of heat.

3) Assertion (A) : In the following reaction **[(31/5/1);(31/5/2); (31/5/3)]**
$ZnO + C \longrightarrow Zn + CO$
ZnO undergoes reduction.
Reason (R) : Carbon is a reducing agent that reduces ZnO to Zn.

Very Short Answer Type Questions [2 Marks]

1) What is observed when aqueous solutions of potassium iodide and lead nitrate are mixed together? Name the type of reaction and write the chemical equation for there action that occurs. **[(31/2/1); (31/2/2); (31/2/3)]**

2) When copper powder is heated in a watch glass, a black substance is formed.
(i) Why is this black substance formed? Name it.
(ii) How can this black substance be reversed to its original form? **[(31/2/1); (31/2/2); (31/2/3)]**

3) State whether the given chemical reaction is a redox reaction or not. Justify your answer.
$MnO_2 + 4HC! \longrightarrow MnCl_2 + 2H_2O + Cl_2$ **[(31/6/1); (31/6/3)]**

4) A metal nitrate 'A' on heating gives a metal oxide along with evolution of a brown coloured gas 'B' and a colourless gas, which helps in burning. Aqueous solution of 'A' when reacted with potassium iodide forms a yellow precipitate.
(a) Identify 'A' and 'B'
(b) Name the types of both the reactions involved in the above statement.

Short Answer Type Questions [3 Marks]

1) (a) Identify the reducing agent in the following reactions:
(i) $4NH_3 + 5O_2 \longrightarrow 4NO + 6H_2O$
(ii) $H_2O + F_2 \longrightarrow HF + HOP$
(iii) $Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO$
(iv) $2H_2 + O_2 \longrightarrow 2\ H_2O$
(b) Define a redox reaction in terms of gain or loss of oxygen. **[(31/1/1); (31/1/2); (31/1/3)]**

2) Silver chloride kept in china dish turns grey in sunlight.
(a) Write the colour of silver chloride when it was kept in the china dish.
(b) Name the type of chemical reaction taking place and write the chemical equation for the reaction.
(c) State one use of the reaction. Name one more chemical which can be used for the same purpose. **[(31/2/1)]**

3) Write down the balanced chemical equations for the following reactions and identify the type of reaction in each case.
(a) Nitrogen gas is treated with hydrogen gas to form ammonia gas.
(b) Lead nitrate is heated strongly to form lead monoxide, nitrogen dioxide and oxygen.
(c) A copper wire is dipped in silver nitrate solution and a shining deposit of silver is produced. **[(31/2/2)]**

4) (a) Define oxidation.
(b) Identify the oxidising agent in the following reactions and balance the chemical equations
(i) $Pb_3O_4 + HCl \longrightarrow PbCl_2 + Cl_2 + H_2O$
(ii) $MnO_2 + Al \longrightarrow Mn + Al_2O_3$

5) (i) While electrolysing water before passing the current some drops of an acid are added. Why ? Name the gases liberated at cathode and anode. Write the relationship between the volume of gas collected at anode and the volume of gas collected at cathode.
(ii) What is observed when silver chloride is exposed to sunlight ? Give the type of reaction involved. **[(31/4/1); (31/4/2); (31/4/3)]**

6) (a) Define a double displacement reaction.
(b) Write the chemical equation of a double displacement reaction which is also a (i) Neutralization reaction and (ii) Precipitation reaction. Give justification for your answer. **[(31/5/1); (31/5/2); (31/5/3)]**

7) With the help of an appropriate example, justify that some of the chemical reactions are determined by **[(31/6/1)]**
(a) Change in temperature,
(b) Evolution of a gas, and
(c) Change in colour
Give chemical equation for the reaction involved in each case.

8) A reddish brown metal used in electrical wires when powdered and heated strongly turns black. When hydrogen gas is passed over this black substance, it regains its original colour. Based on this information answer the following questions **[(31/6/2)]**

(a) Name the metal and the black substance formed.
(b) Write balanced chemical equations for the two reactions involved in the above information.

9) State the change in colour observed in each of the following cases mentioning the reason :
(a) Silver chloride is exposed to sunlight.
(b) A piece of zinc is dipped in ferrous sulphate solution.
(c) Copper powder is strongly heated in air. **[(31/6/1); (31/6/3)]**

Year 2020

Multiple choice questions [1 marks]

1) Calcium oxide reacts vigorously with water to produce slaked lime. **[(31/1/1); (31/1/3)]**
$CaO(s) + H_2O(l) \longrightarrow 2\ Ca(OH)_2(aq)$.
This reaction can be classified as:
(A) Combination reaction
(B) Exothermic reaction
(C) Endothermic reaction
(D) Oxidation reaction.
Which of the following is a correct option?
(a) (A) and (C) (b) (C) and (D) (c) (A), (C) and (D) (d) (A) and (B)

2) When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution.
The reaction is an example of a:
(a) Combination reaction
(b) Displacement reaction
(c) Decomposition reaction
(d) Double displacement reaction**[(31/1/1); (31/1/3)]**

3) In a double displacement reaction such as the reaction between sodium sulphate solution and barium chloride solution: **[(31/1/1); (31/1/2);(31/1/3)]**
(A) exchange of atoms takes place
(B) exchange of ions takes place
(C) a precipitate is produced
(D) an insoluble salt is produced
The correct option is:
(a) (B) and (D) (b) (A) and (C) (c) only (B) (d) (B), (C) and (D)

4) Identify 'x', 'y' and 'z' in the following reaction : **[(31/2/1); (31/2/2); (31/2/3)]**

$$2\ KClO_3\ (x) \xrightarrow{(y)} 2\ KCl\ (x) + O_2(z)$$

(a) x = gas ; y = reaction condition, z = gas
(b) x = solid ; y = liquid; z = gas
(c) x = number of moles of $KClO_3$; y = reaction condition; z = no. of molecules of oxygen.
(d) x = physical state of $KClO_3$ and KCl; y = reaction condition; z = physical state of O_2 .

5) Strong heating of ferrous sulphate leads to the formation of a brown solid and two gases. This reaction can be categorised as
(a) displacement and redox.
(b) decomposition and redox.

(c) displacement and endothermic.
(d) decomposition and exothermic **[(31/5/1); (31/5/2); (31/5/3)]**

6) In which of the following, the identity of initial substance remains unchanged ?
(a) Curdling of milk
(b) Formation of crystals by process of crystallisation
(c) Fermentation of grapes
(d) Digestion of food **[(31/3/1); (31/3/2); (31/3/3)]**

Assertion and Reason [1 marks]

Two statements are given — one labelled as Assertion (A) and the other labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

(a) Both (A) and (R) are true and (R) is the correct explanation of the assertion (A).
(b) Both (A) and (R) are true, but (R) is not the correct explanation of the assertion (A).
(c) (A) is true, but (R) is false.
(d) (A) is false, but (R) is true.

1) Assertion (A) : Following is a balanced chemical equation for the action of steam on iron :
$3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$
Reason (R) : The law of conservation of mass holds good for a chemical equation.
[(31/4/1); (31/4/3)]

2) Assertion (A) : The reaction $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$ is an example of a redox reaction.
Reason (R) : In this reaction, HCl is reduced to Cl_2 whereas MnO_2 is oxidised to $MnCl_2$. **[(31/4/2)]**

3) Assertion (A) : At high temperatures, metal wires have a greater chance of short circuiting.
Reason (R) : Both resistance and resistivity of a material vary with temperature.
[(31/5/1); (31/5/2); (31/5/3)]

Short Answer Type Questions [3 Marks]

1) 1g of copper powder was taken in a China dish and heated. What change takes place on heating? When hydrogen gas is passed over this heated substance, a visible change is seen in it. Give the chemical equations reactions, the name and the color of the products formed in each case. **[(31/1/1); (31/1/3)]**

2) Mention with reason the colour changes observed when :
(i) silver chloride is exposed to sunlight.
(ii) copper powder is strongly heated in the presence of oxygen.
(iii) a piece of zinc is dropped in copper sulphate solution**[(31/3/1); (31/3/2); (31/3/3)]**

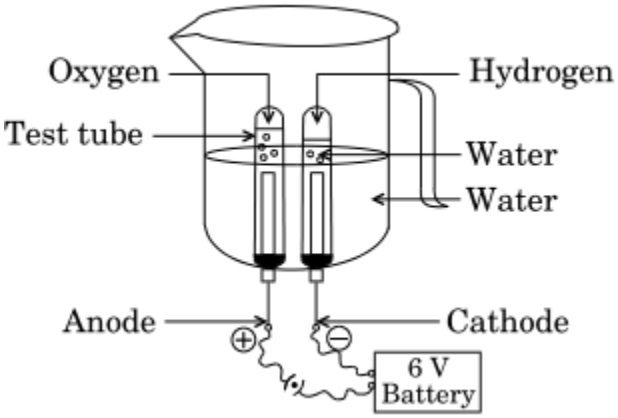
3) Identity the type of each of the following reactions. Also write balanced chemical equation for each reaction.
(i) A reaction in which the reaction mixture becomes warm.
(ii) A reaction in which an insoluble substance is formed. **[(31/3/3)]**

4) Lead nitrate solution is added to a test tube containing potassium iodide solution.
(a) Write the name and colour of the compound precipitated.
(b) Write the balanced chemical equation for the reaction involved.
(c) Name the type of this reaction justifying your answer. **[(31/4/1); (31/4/3)]**

5) What happens when food materials containing fats and oils are left for a long time? List two observable changes and suggest three ways by which this phenomenon can be prevented.
[(31/4/1); (31/4/3)]

6) When hydrogen sulphide gas is passed through a blue solution of copper sulphate, the colour of the solution fades and a black precipitate is obtained.
(a) Name the type of reaction mentioned above.
(b) Why does the colour of the solution fade away?
(c) Write the chemical name of the black precipitate formed.
(d) Give the balanced chemical equation for the reaction involved. **[(31/4/2)]**

7) Study the figure given below and answer the following questions :



(a) Name the process depicted in the diagram.
(b) Write the composition of the anode and the cathode.
(c) Write the balanced chemical equation of the reaction taking place in this case.
(d) The reaction does not take place if a few drops of dilute sulphuric acid are not added to water. Why? **[(31/4/2)]**

8) A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.
(a) Identify 'M' and 'N'.
(b) Represent the above reaction in the form of a balanced chemical equation.
(c) Does 'M' undergo oxidation or reduction in this reaction? Justify. **[(31/5/1); (31/5/2)]**

9) In the electrolysis of water
(a) Name the gases liberated at anode and cathode.
(b) Why is it that the volume of gas collected on one electrode is two times that on the other electrode?
(c) What would happen if dil. H_2SO_4 is not added to water? **[(31/5/1); (31/5/2); (31/5/3)]**

10) Identify the type of each of the following reactions stating reason for your answers:
(a) $Fe_2O_3 + 2Al \longrightarrow Al_2O_3 + 2Fe + heat$
(b) $Pb(NO_3)_2 + 2KI \longrightarrow PbI_2 + 2KNO_3$
(c) $ZnCO_3 \xrightarrow{heat} ZnO + CO_2$ **[(31/5/3)]**

Year 2019

Very Short Answer Type Questions [2 Marks]

1) What is brine? What happens when an electric current is passed through it ? Write chemical equation for it. **[(31/5/2)]**

2) List the changes that are observed when dil. HCl is added to a small amount of copper oxide in a beaker. Write balanced chemical equation for the reaction. **[(31/5/2)]**

Short Answer Type Questions [3 Marks]

1) 2 g of silver chloride is taken in a china dish and the china dish is placed in sunlight for sometime. What will be your observation in this case? Write the chemical reaction involved in the form of a balanced chemical equation. Identify the type of chemical reaction. **[(31/1/1); [(31/1/2); (31/1/3)]**
2) Identify the type of reactions taking place in each of the following cases and write the balanced chemical equation for the reactions.
   (a) Zinc reacts with silver nitrate to produce zinc nitrate and silver.
   (b) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide. **[(31/1/1); (31/1/2); (31/1/3)]**
3) On heating blue coloured powder of copper (II) nitrate in a boiling tube, black copper oxide, O_2 and a brown gas X is formed.
   (a) Identify the type of reaction and the gas X.
   (b) Write balanced chemical equation of the reaction.
   (c) Write the pH range of aqueous solution of the gas X **[(31/2/1); (31/2/2)]**
4) (a) Classify the following reactions into different types:
   (i) $AgNO_3$ (aq) + NaCl(aq) $\longrightarrow$ AgCl(s) + $NaNO_3$ (aq)
   (ii) CaO(s) + H_2O(l) $\longrightarrow$ $Ca(OH)_2$ (aq)
   (iii) $2KClO_3$ (s) $\xrightarrow{\Delta}$ 2KCl(aq) + $3O_2$ (g)
   (iv) Zn + $CuSO_4$ $\longrightarrow$ $ZnSO_4$ + Cu
   (b) Translate the following statement into a balanced chemical equation: ‘‘Barium chloride reacts with aluminium sulphate to give aluminium chloride and barium sulphate.’’ **[(31/4/1);(31/4/2); (31/4/3)]**
5) When potassium iodide solution is added to a solution of lead (II) nitrate in a test tube, a precipitate is formed.
   (a) What is the colour of this precipitate ? Name the compound precipitated.
   (b) Write the balanced chemical equation for this reaction.
   (c) List two types of reactions in which this reaction can be placed. **[(31/4/1); (31/4/2); (31/4/3)]**
6) 2 g of ferrous sulphate crystals are heated in a dry boiling tube.
   a. List any two observations.
   b. Name the type of chemical reaction taking place.
   c. Write balanced chemical equation for the reaction and name the products formed.**[(31/5/1); (31/5/2); (31/5/3)]**
7) You might have noted that when copper powder is heated in a china dish, the reddish brown surface of copper powder becomes coated with a black substance.
   a. Why has this black substance formed?
   b. What is this black substance?
   c. Write the chemical equation of the reaction that takes place.
   d. How can the black coating on the surface be turned reddish brown?**[(31/5/1); (31/5/2); (31/5/3)]**

Long Answer Type Questions [5 Marks]

1) (a) What is a double displacement reaction? Explain with an example.
   (b) A small amount of quick lime is added to water in a beaker.
   i. Name and define the type of reaction that has taken place.
   ii. Write balanced chemical equation for the above reaction and the chemical name of the product formed.

iii. List two main observations of this reaction **[(31/3/1); (31/3/2); (31/3/3)]**

2) (a) Design an activity to demonstrate the decomposition reaction of lead nitrate.
(b) Draw labelled diagram of the experimental set-up. List two main observations.
(c) Write balanced chemical equation for the reaction stating the physical state of the reactant and the products **[(31/3/1); (31/3/2); (31/3/3)]**

Practical Skill Based Question

1) In the experimental set up to show that "CO_2 is given out during respiration", name the substance taken in the small test tube kept in the conical flask. State its function and the consequence of its use.**[(31/1/1)]**
2) What would a student report nearly after 30 minutes of placing duly cleaned strips of aluminium, copper, iron and zinc in freshly prepared iron sulphate solution taken in four beakers?**[(31/2/1); (31/2/2); (31/2/3)]**
3) What is observed after about 1 hour of adding the strips of copper and aluminium separately to ferrous sulphate solution filled in two beakers? Name the reaction if any change in colour is noticed. Also, write chemical equation for the reaction.**[(31/3/1); (31/3/2); (31/3/3)]**
4) A student wants to study a decomposition reaction by taking ferrous sulphate crystals. Write two precautions he must observe while performing the experiment.**[(31/3/1); (31/3/2); (31/3/3)]**
5) A student mixes sodium sulphate powder in barium chloride powder. What change would the student observe on mixing the two powders? Justify your answer and explain how he can obtain the desired change. **[(31/4/1); (31/4/2); (31/4/3)]**
6) (a) Arrange the following metals in the increasing order of their reactivities :
Copper, Zinc, Aluminium and Iron
(b) List two observations you would record in your notebook 30 minutes after adding iron filings to copper sulphate solution. **[(31/4/1); (31/4/2); (31/4/3)]**
7) What would you observe on adding zinc granules to freshly prepared ferrous sulphate solution? Give reason for your answer.**[(31/5/1); (31/5/2); (31/5/3)]**

Year 2018

Very Short Answer Type Questions [2 Marks]

1) A student added few pieces of aluminium metal to two test tubes A and B containing aqueous solutions of iron sulphate and copper sulphate. In the second part of her experiment, she added iron metal to another test tubes C and D containing aqueous solutions of aluminium sulphate and copper sulphate. n which test tube or test tubes will she observe colour change ? On the basis of this experiment, state which one is the most reactive metal and why?
2) What is observed when a solution of sodium sulphate is added to a solution of barium chloride taken in a test tube ? Write equation for the chemical reaction involved andname the type of reaction in this case.

Short Answer Type Questions [3 Marks]

1) Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactants. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity. **[All India]**

Long Answer Type Questions [5 Marks]

1) What is the difference between displacement reaction and double displacement reaction ? Give two examples each of these reactions.**[For Blind Student]**

Year 2015

Short Answer Type Questions[2 Marks]

1) "We need to balance a skeltal chemical equation." Give reason to justify the statement.
2) Name the reducing agent in the following reaction:
   $3MnO_2 + 4Al \longrightarrow 3Mn + 2Al_2O_3$
   State which is more reactive, Mn or Al and why?
3) Giving an example list two information which make a chemical equation more useful (informative).
4) Consider the following chemical reaction
   X + Barium chloride $\longrightarrow$ Y + Sodium chloride
   (White ppt)
   (a) Identify 'X' and 'Y'
   (b) The type of reaction

Short Answer Type Questions [3 Marks]

1) A Name the type of chemical reaction represented by the following equation:
   (i) $CaO + H_2O \longrightarrow Ca(OH)_2$
   (ii) $3BaCl_2 + Al_2(SO_4)_3 \longrightarrow 3BaSO_4 + 2\ AlCl_3$

   (iii) $2FeSO_4 \xrightarrow{\text{heat}} Fe_2O_3 + SO_2 + SO_3$
2) 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
3) State the type of chemical reactions and chemical equations that take place in the following:
   (i) Magnesium wire is burnt in air.
   (ii) Electric current is passed through water.
   (iii) Ammonia and hydrogen chloride gases'are mixed.
4) (a) Write the essential condition for the following reaction to take place:
   $2AgBr \longrightarrow 2Ag + Br_2$
   Write one application of this reaction.
   (b) Complete the following chemical equation of a chemical reaction $2FeS0_4$ —

   $2FeSO_4 \xrightarrow{\text{heat}} Fe_2O_3 + \ldots\ldots + \ldots\ldots$
   (c) What happens when water is added to quick line. Write chemical equation.
5) 2g 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.
   (iii) 'Write the chemical equation for the reaction.

Long Answer Type Questions [5 Marks]

1) (a) Define a balanced chemical equation. Why should an equation be balanced?
   (b) Write the balanced chemical equation for the following reaction:
   (i) Phosphorus burns in presence of chlorine to form phosphorus penta chloride.
   (ii) Burning of natural gas.
   (iii)The process of respiration.
2) (a) Explain two ways by which food industries prevent rancidity.
   (b) Discuss the importance of decomposition reaction in metal industry with three points.

Year 2014

Short Answer Type Question [2 Marks]

1) What is observed when a solution of potassium iodide solution is added to a solution of lead nitrate? Name the type of reaction. Write a balanced chemical equation to represent the above chemical reaction.

Short Answer Type Question [3 Marks]

1) Write chemical equation reactions taking place when carried out with the help of
   (a) Iron reacts with steam
   (b) Magnesium reacts with dil HCl
   (c) Copper is heated in air.

Long Answer Type Question [5 Marks]

1) (a) Write one example for each of decomposion reaction carried out with help of
   (i) Electricity (ii) Heat (iii) Light
   (b) Which of the following statements is correct and why copper can displace silver from silver nitrate and silver can displace copper from copper sulphate solution.

Year 2013

Short Answer Type Questions [3 Marks]

1) Which products will be obtained when lead nitrate is heated simply. Write balanced chemical equation for the reaction? State the type of chemical reaction that occur in the change.
2) What is meant by skeletal type chemical equation? What does it represent? Using the equation for electrolytic decomposition of water, differentiate between a skeletal chemical equation and a balanced chemical equation.

Year 2012

Short Answer Type Questions [2 Marks]

1) Write balanced chemical equations for the following reactions.
   (i) Silver bromide on exposure to sunlight decomposes into silver and bromine,
   (ii) Sodium metal reacts with water to form sodium hydroxide and hydrogen gas.
2) Identify the type of reaction(s) in the following equations.
   (i) $CH_4 + 2O_2 \longrightarrow CO_2 + 2\ H_2O$
   (ii) $Pb(NO_3)_2 + 2KI \longrightarrow PbI_2 + 2KNOs$
   (iii) $CaO + H_2O \longrightarrow Ca(OH)_2$
   (iv) $CuSO_4 + Zn \longrightarrow ZnSO_4 + Cu$

3) Write balanced equation for the reaction between magnesium and hydrochloric acid. Name the product obtained, identify the type of reaction.
4) Describe an activity to observe what happens when quick lime is added to water taken in a beaker. State two important observations and name the type of reaction taking place.
5) What is the colour of ferrous sulphate crystals? How does this colour change after heating?
6) Why does the colour of copper sulphate solution change when an iron nail is dipped in it? Write two observations.
7) Translate the following statement into chemical equation and then balance it Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate. State the two types in which this reaction can be classified.
8) Why are decomposition reactions called the opposite of combination reactions? Write equations for these reactions.

Short Answer Type Questions [3 Marks]

1) The following diagram displays a chemical reaction. Observe carefully and answer the following questions
2) What is rancidity? Mention any two ways by which rancidity can be prevented..
3) Write balanced chemical equation for the reactions that take place during respiration. Identify the type of combination reaction that takes place during this process and justify the name. Give one more example of this type of reaction.
4) What is redox reaction? Identify the substance oxidised and the substance reduced in the following reactions.
   (i) $2PbO + C \longrightarrow 2Pb + CO_2$
   (ii) $MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_20 + Cl_2$
5) Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.
   Thermite reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.
6) A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction?

Year 2011

Very Short Answer Type Questions [1 Mark]

1) State one basic difference between a physical change and a chemical change.
2) What is meant by a chemical reaction?
3) Consider the above mentioned two chemical equations with two different kinds of arrows (↑and ↓) along with product. What do these two different arrows indicate?
4) Hydrogen being a highly inflammable gas and oxygen being a supporter of combustion, yet water which is a compound made up of hydrogen and oxygen is used to extinguish fire. Why?

Very Short Answer Type Questions [2 Marks]

1) Using a suitable chemical equation, justify that some chemical reactions are determined by:(i) change in colour, (ii) change in temperature.

2) (a) A solution of substance 'X' is used for white washing. What is the substance 'X'? State the chemical reaction of 'X' with water.
   (b) Why does the colour of copper sulphate solution change when an iron nail is dipped in it?
3) Balance the following chemical equations.
   (i) $BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + HCl$
   (ii) $Ca(OH)_2 + HNO_3 \longrightarrow Ca(NO_3)_2 + H_2O$
   (iii) $Pb(NO_3)_2 \longrightarrow PbO + NO_2 + O_2$
   (iv) $MnO_2 + HCl \longrightarrow MnCl_2 + H_2O + Cl_2$
4) Write the balanced equation for the. following reaction and identify the type of reaction in each case.
   (i) Potassium bromide + Barium iodide ⟶ Potassium iodide + Barium bromide.
   (ii) Hydrogen(g) + Chlorine(g) ⟶ Hydrogen chloride(g)
5) A zinc plate was put into a solution of copper sulphate kept in a glass container. It was found that blue colour of the solution gets fader and fader with the passage of time. After few days, when zinc plate was taken out of the solution, a number of holes were observed on it.
   (i) State the reason for changes observed on the zinc plate.
   (ii) Write the chemical equation for the reaction involved.
6) A white salt on heating decomposes to give brown fumes and a residue is left behind.
   (i) Name the salt.
   (ii) Write the equation for the decom-position reaction.
7) When a solution of potassium iodide is added to a solution of lead nitrate in a test tube, a reaction takes place.
   (a) What type of reaction is this?
   (b) Write a balanced chemical equation to represent the above reaction.
8) Define combination reaction. Give one example of a combination reaction which is also exothermic.

Short Answer Type Questions [3 Marks]

1) (a) Classify the following reactions into different types.
   (i) $AgNO_3(aq) + NaCl(aq) \longrightarrow AgCl(s) + NaNO_3(aq)$
   (ii) $CaO(s) + H_2O(l) \longrightarrow Ca(OH)_2\ (aq)$
   (iii) $2KClO_3(s) \xrightarrow{heat} 2KCl + 3O_2(g)$
   (b) Which of the above reaction(s) is/are precipitation reaction(s)? Why is a reaction called precipitation reaction?
2) Write balanced equations for the following mentioning the type of reaction involved.
   (i) Aluminium + Bromine ⟶ Aluminium bromide
   (ii) Calcium carbonate ⟶ Calcium oxide + Carbon dioxide
   (iii) Silver chloride ⟶ Silver + Chlorine
3) (a) Why is respiration considered as an exothermic reaction?
   (b) Define the terms oxidation and reduction.
   (c) Identify the substance that is oxidised and reduced in the following reaction.
   $CuO(s) + Zn(s) \longrightarrow Cu(s) + ZnO(s)$
4) What is meant by
   (i) precipitation reaction,
   (ii) exothermic reaction,

(iii) oxidation reaction?
Write balanced chemical equations for an example of each.

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

Year 2010

Very Short Answer Type Questions [1 Mark]

1) What changes in the colour of iron nails and copper sulphate solution do you observe after keeping the iron nails dipped in copper sulphate solution for about 30 minutes ? **[Delhi]**
2) Write a balanced chemical equation for the reaction between sodium carbonate and hydrochloric acid indicating the physical state of the reactants and the products. **[Foreign]**
3) What happens chemically when quicklime is added to water filled in a bucket? On what basis is a chemical equation balanced?
4) What change in colour is observed when white silver chloride is left exposed to sunlight? State the type of chemical reaction in this change.
5) Write a balanced chemical equation for the reaction between sodium chloride and silver nitrate indicating the physical state of the reactants and the products.

Very Short Answer Type Questions [2 Marks]

1) What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.
2) 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?
3) Write any two observations in an activity which may suggest that a chemical reaction has taken place. Give an example in support of your answer.
4) 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.

Short Answer Type Questions [3 Marks]

1) No chemical reaction takes place when granules of a solid, A, are mixed with the powder of another solid, B. However when the mixture is heated, a reaction takes place between its components. One of the products, C, is a metal and settles down in the molten state while the other product, D, floats over it. It was observed that the reaction is highly exothermic.
(i) Based on the given information make an assumption about A and Band write a chemical equation for the chemical reaction indicating the conditions of reaction, physical state of reactants and products and thermal status of reaction.

(ii) Mention any two types of reactions under which above chemical reaction can be classified. **[Delhi]**

Year 2009

Very Short Answer Type Questions [1 Marks]

1) In electrolysis of water, why is the volume of gas collected over one electrode double that of gas collected over the other electrode ? **[All India]**
2) Balance the following chemical equation :

$Pb(NO_3)_2(s) \xrightarrow{heat} PbO(s) + NO_2(g) + O_2(g)$ **[Delhi]**

3) What change in colour is observed when white silver chloride is left exposed to sunlight ? What type of chemical reaction is this ? **[Foreign]**

Very Short Answer Type Questions [2 Marks]

1) (i) What is observed when a solution of potassium iodide is added toa 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. **[All India]**
2) (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 ? **[Delhi]**
3) What is a redox reaction ? When a magnesium ribbon burns in air with a dazzling flame and forms a white ash, is magnesium oxidized or reduced ?Why ? **[Foreign]**
6) Name the products formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?
7) What is an oxidation reaction? Give an example of oxidation reaction. Is oxidation an exothermic or an endothermic reaction?
8) Describe an activity to demonstrate the change that takes place when white silver chloride is kept in sunlight. State the type of chemical reaction which takes place.
9) 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.
10) What do you mean by exothermic and endothermic reactions? Give examples.
11) Distinguish between a displacement reaction and a double displacement reaction. Identify the displacement and the double displacement reaction from the following reactions.
   (i) $HCl(aq) + NaOH(aq) \longrightarrow NaCl(aq) + H_2O(l)$
   (ii) $Fe(s) + CuSO_4(aq) \longrightarrow FeSO_4(aq) + Cu(s)$
12) When you have mixed the solutions of lead(II) nitrate and potassium iodide,
   (i) what was the colour of the precipitate formed and can you name the precipitate?
   (ii) write the balanced chemical equation for this reaction.
   (iii) is this also a double displacement reaction?