

Very Short Answer Type Questions

[1 mark]

Q. 1. Why is combustion of Liquefied Petroleum Gas (LPG) a chemical change?

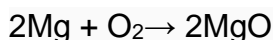
Ans. Combustion of Liquefied Petroleum Gas (LPG) is a chemical change because after its combustion, the substance formed changes chemically and cannot be turned back into LPG.

Q 2. What is wrong with the following equation?

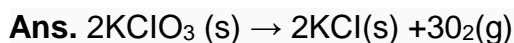


Identify the mistake and balance the equation.

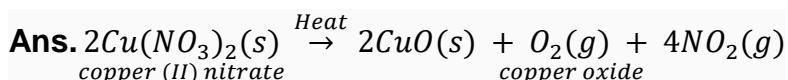
Ans. In this equation, oxygen should be in molecular form (O_2) as oxygen exists as bimolecular gas O_2 .



Q. 3. Potassium chlorate (KClO_3) on heating forms potassium chloride and oxygen. Write a balanced equation for this reaction.



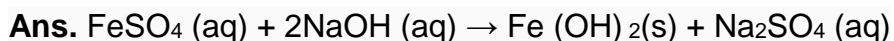
Q. 4. On heating blue colored powder of copper(II) nitrate in a boiling tube, copper oxide (black), oxygen gas and a brown gas 'X' is formed. Identify the brown gas 'X'.



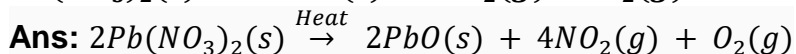
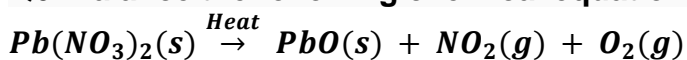
X' is nitrogen dioxide gas.

Q.5. Convey the following information in the form of a balanced chemical equation:

“An aqueous solution of ferrous sulphate reacts with an aqueous solution of sodium hydroxide to form a precipitate of ferrous hydroxide and sodium sulphate remains in solution.”

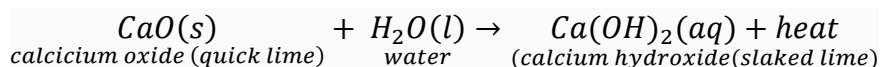


Q6. Balance the following chemical equation:



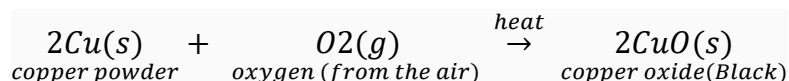
Q. 7. Give one example of a combination reaction which is also exothermic.

Ans. When quicklime or calcium oxide (CaO) reacts with water, slaked lime [Ca(OH)₂] is formed. During this reaction, a large amount of heat is released. So, this reaction is an exothermic Reaction.

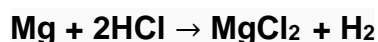
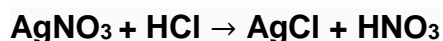


Q.8. Why will the colour of heated copper powder become black when air is passed over it?

Ans. When copper powder is heated in the presence of air, black copper oxide is formed.



Q. 9. What is the difference between the following two types of reactions?

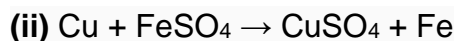
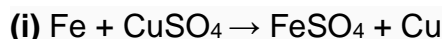


Ans. The first reaction is a double displacement reaction whereas second reaction is a single displacement reaction.

Q. 10. Why is hydrogen peroxide kept in coloured bottles?

Ans. This is done in order to cut off light because hydrogen peroxide decomposes into water and oxygen in the presence of light.

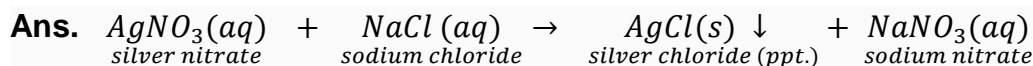
Q. 11. Consider the following reactions:



Which of these two reactions will take place and why?

Ans. Reaction (i) will take place. This is because Fe (iron) is more reactive than Cu (copper) and so it can displace Cu from its compound (CuSO₄). On the other hand, copper (Cu) cannot displace iron (Fe), so reaction (ii) will not take place.

Q. 12. Give one example of a reaction which is a double displacement reaction as well as a Precipitation reaction.



Q. 13. Why is photosynthesis considered an endothermic reaction?

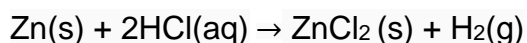
Ans. Photosynthesis is an endothermic reaction because energy, in the form of sunlight is absorbed during the process of photosynthesis by green plants.

Q. 14. What type of reaction is represented by the digestion of food in our body?

Ans. Decomposition reaction.

Q. 15. How will you test for the gas which is liberated when hydrochloric acid reacts with an active metal?

Ans. When an active metal like Zn reacts with HCl, the gas produced burns with a pop sound which indicates that it is hydrogen gas.



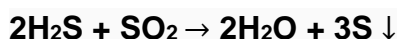
Q. 16. Can a double displacement reaction take place when the products are highly soluble or highly ionised?

Ans. No, double displacement reaction takes place when there is a formation of a slightly soluble salt.

Q. 17. 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?

Ans. Iron nails become brownish in colour and the blue colour of copper sulphate solution fades. This is because iron displaces copper from copper sulphate solution and forms ferrous sulphate which is colourless.

Q. 18. Name the oxidising and reducing agent in the following reaction:



Ans. H₂S is the reducing agent while SO₂ is the oxidising agent.

Q. 19. A dilute ferrous sulphate solution was gradually added to the beaker containing acidified potassium permanganate solution. The light purple colour of the solution fades and finally disappears. Write the correct explanation for this observation.

Ans. Potassium permanganate solution (KMnO₄) is an oxidising agent. It oxidises ferrous sulphate (FeSO₄) to ferric sulphate [Fe₂(SO₄)₃].

Q. 20. Define rancidity.

Ans. The oxidation of oils or fats in food resulting in a bad taste and smell is called rancidity.

Q. 21. Name one synthetic antioxidant.

Ans. Butylated hydroxyanisole (BHA).

Short Answer Type Questions – I

[2 marks]

Q 1. Which among the following are physical or chemical changes?

- (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

Ans. (a) Physical change

(b) Chemical change

(c) Physical change

(d) Chemical change

(e) Physical change

Q. 2. How do we come to know that a chemical reaction has taken place?

Ans. The presence of any of the following changes helps us to determine that a chemical reaction has taken place.

(i) Formation of new substance(s)

(ii) Change in state

(iii) Change in colour

(iv) Change in temperature

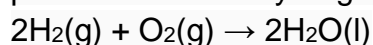
(v) Formation of a precipitate

(vi) Evolution of a gas

For example, if on mixing two substances a gas is evolved, then we can say that a chemical reaction has taken place.

Q. 3. What is an oxidation reaction? Give an example of oxidation reaction. Is oxidation an exothermic or an endothermic reaction?

Ans. The reaction in which oxygen combines with other elements or compounds is known as an oxidation reaction. For example, burning of hydrogen is an oxidation process in which hydrogen combines with oxygen to form water.



Oxidation reactions are exothermic.

Q.4. Why do fire flies glow at night?

Ans. Fire flies have a protein which in the presence of an enzyme undergoes aerial. This is a chemical reaction which involves emission of visible light. Therefore, fire files glow at night.

Q.5. Give reasons:

(a) Aluminium is a reactive metal but is still used for packing food articles.

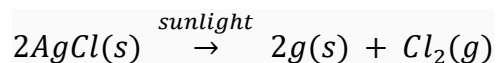
(b) Red litmus paper turns blue when touched with aqueous solution of magnesium oxide.

Ans. (a) On exposure to air, aluminium forms a hard protective layer of aluminium oxide (Al_2O_3) which prevent further oxidation.

(b) Magnesium oxide is an oxide of a metal, so, it is basic in nature. Due to its basic character it turns red litmus paper blue when touched with its aqueous solution.

Q. 6. What happens when silver chloride is exposed to sunlight? Write a chemical equation for this reaction. Also give one use of such a reaction.

Ans. When silver chloride is exposed to light, it decomposes to form silver metal and chlorine gas.



This reaction is used in black and white photography.

Q.7. What type of chemical reactions are represented by the following equations?

(i) $A + B \rightarrow C$

(ii) $A + BC \rightarrow AC + B$

(iii) $A \rightarrow B + C$

(iv) $AB + CD \rightarrow AD + BC$

Ans. (i) Combination reaction

(ii) Displacement reaction

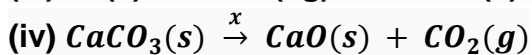
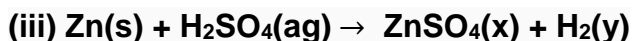
(iii) Decomposition reaction

(iv) Double displacement reaction

Q.8 Complete the missing components/variables given as a and y in the following reactions:

(i) $Pb(NO_3)_2(aq) + 2KI(aq) \rightarrow PbI_2(x) + 2KNO_3(y)$

(ii) $Cu(s) + 2AgNO_3(aq) \rightarrow Cu(NO_3)_2(aq) + x(s)$



Ans. (i) x — (s); y — (aq)

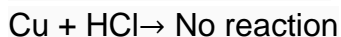
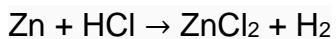
(ii) x — 2 Ag

(iii) x — (aq); y — (g)

(iv) x — Heat

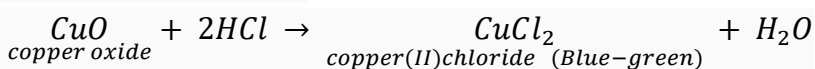
Q.9 Zinc liberates hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?

Ans. Zinc is above hydrogen whereas copper is below hydrogen in the activity series of metals. That is why zinc displaces hydrogen from dilute hydrochloric acid, while copper does not.

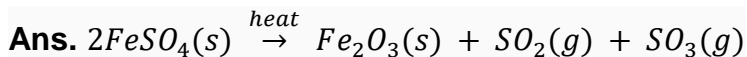


Q. 10. On adding dilute HCl to copper oxide powder, the solution formed is blue-green. Predict the new compound formed which imparts a blue-green colour to the solution.

Ans. The new compound formed is copper(II) chloride (CuCl_2), which imparts blue-green colour to the solution.



Q. 11. Ferrous sulphate decomposes with the evolution of a gas having a characteristic odour of burning sulphur. Write the chemical reaction involved and identify the type of reaction.



It is a thermal decomposition reaction.

Q. 12. Identify the substance oxidised, substance reduced, oxidising agent and reducing agent:



Ans. Substance oxidized : HCl

Substance reduced : MnO_2

Oxidising agent : MnO₂

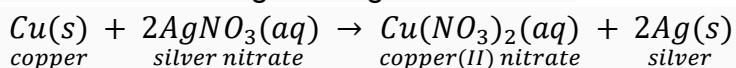
Reducing agent : HCl

Q. 13. 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?

Ans. Grapes when attached to the plants are living and therefore, their own immune system prevents fermentation. The microbes can grow in the plucked grapes and under anaerobic conditions these can be fermented. This is a chemical change.

Q. 14. A copper coin was kept dipped in silver nitrate solution for a few hours/days. What will happen to the copper coin? What will happen to the colour of the solution?

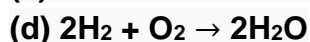
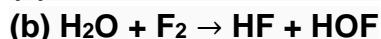
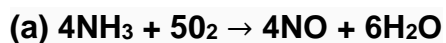
Ans. Copper is more reactive than silver. Hence, it displaces silver from the silver nitrate solution according to the given reaction.



The silver thus formed is deposited on the surface of copper, thereby giving it a white shining appearance.

The solution becomes blue due to the formation of copper nitrate.

Q. 15. Identify the reducing agent in the following reactions.



Ans. (a) Ammonia (NH₃)

(b) Water (H₂O) as F₂ is getting reduced to HF

(c) Carbon monoxide (CO)

(d) Hydrogen (H₂)

Q 16. What is the role of a catalyst in a chemical reaction?

Ans. Catalyst changes (usually increases but sometimes decreases) the rate of a chemical reaction without itself being consumed in the reaction.

Short Answer Type Questions – II

[3 Marks]

Q. 1. Translate the following statements into chemical equations and balance them:

(i) Lead nitrate reacts with sulphuric acid to form a precipitate of lead sulphate and nitric acid.

(ii) Magnesium burns in the presence of nitrogen to form magnesium nitride.

(iii) Aluminium metal strip is added in hydrochloric acid to produce aluminium chloride and hydrogen gas.

Ans. (i) $\text{Pb}(\text{NO}_3)_2(\text{aq}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{PbSO}_4(\text{s}) + 2\text{HNO}_3(\text{aq})$

(ii) $3 \text{Mg}(\text{s}) + \text{N}_2\text{g} \xrightarrow{\Delta} \text{Mg}_3\text{N}_2(\text{s})$

(iii) $2\text{Al}(\text{s}) + 6\text{HCl}(\text{aq}) \rightarrow 2\text{AlCl}_3(\text{aq}) + 3\text{H}_2(\text{g})$

Q. 2. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

(i) nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773 K to form ammonia gas.

(ii) Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

(iii) Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated H_2SO_4 .

(iv) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

Ans. (i) $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \xrightarrow[773 \text{ K}]{\text{catalyst}} 2\text{NH}_3(\text{g})$

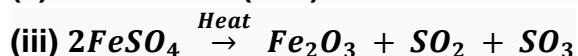
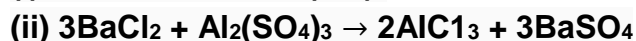
(ii) $\text{NaOH}(\text{aq}) + \text{CH}_3\text{COOH}(\text{aq}) \rightarrow \text{CH}_3\text{COONa}(\text{aq}) + \text{H}_2\text{O}(\text{l})$
Double displaced reaction/Neutralisation reaction

(iii) $\text{C}_2\text{H}_5\text{OH}(\text{l}) + \text{CH}_3\text{COOH}(\text{l}) \xrightarrow{\text{H}^+} \text{CH}_3\text{COOC}_2\text{H}_5(\text{l}) + \text{H}_2\text{O}(\text{l})$
Double displaced reaction/Esterification reaction

(iv) $\text{C}_2\text{H}_4(\text{g}) + 3\text{O}_2(\text{g}) \rightarrow 2\text{CO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g}) + \text{Heat} + \text{light}$

Redox reaction /Combustion reaction

Q.3. Name the type of chemical reaction represented by the following equation:



Ans. (i) Combination reaction

(ii) Double displacement reaction

(iii) Decomposition reaction

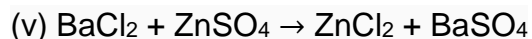
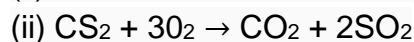
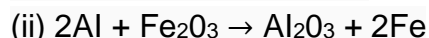
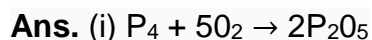
Q. 4. Translate the following statements into chemical equations and then balance the equations:

(i) Phosphorus burns in oxygen to give phosphorus pentoxide.

(ii) Aluminium metal replaces iron from ferric oxide, Fe_2O_3 , giving aluminium oxide and iron.

(iii) Carbon disulphide burns in air to give carbon dioxide and sulphur dioxide.

(iv) Barium chloride reacts with zinc sulphate to give zinc chloride and barium sulphate.



Q.5. (i) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?

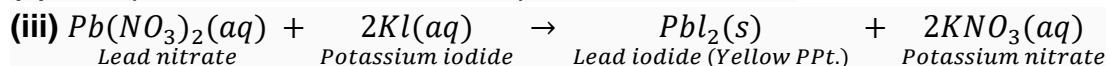
(ii) What type of reaction is this?

(iii) Write a balanced chemical equation to represent the above reaction.

Ans:

(i) A yellow precipitate of lead iodide (PbI_2) is formed.

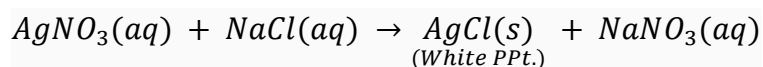
(ii) Precipitation reaction/Double displacement reaction.



Q.6. (i) What happens when silver nitrate solution is added to sodium chloride solution? Write the equation for the reaction which takes place.

(ii) Name the type of reaction involved.

Ans. (i) When silver nitrate solution is added to sodium chloride solution, a white precipitate of silver chloride is formed along with sodium nitrate solution.



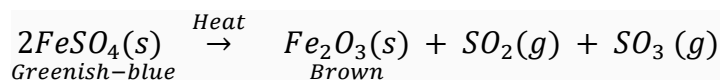
(ii) This is double displacement reaction.

Q.7. (i) What is the colour of ferrous sulphate crystals? How does this colour change after heating?

(ii) Name the products formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?

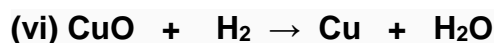
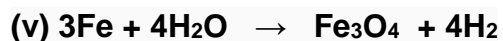
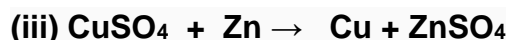
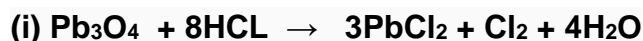
Ans. (i) The colour of ferrous sulphate crystals is green. On heating, $FeSO_4 \cdot 7H_2O$ first decomposes to form anhydrous ferrous sulphate ($FeSO_4$) which is white in colour.

(ii) The products formed on strongly heating ferrous sulphate crystals are ferric oxide, sulphur dioxide and sulphur trioxide.



This is a type of decomposition reaction (thermal decomposition).

Q. 8. Identify the oxidizing agent (oxidant) in the following reactions.



Ans. (i) Pb_3O_4

(ii) O_2

(iii) $CuSO_4$

(iv) V_2O_5

(v) H_2O

(vi) CuO

Q. 9. Solid calcium oxide was taken in a container and water was added slowly to it,

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

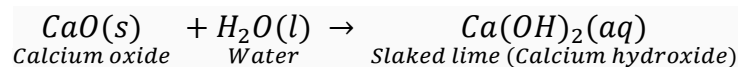
(ii) Write the name and chemical formula of the product formed.

Ans. (i) Following are the two observations:

(a) Calcium oxide (CaO) reacts vigorously with water to form slaked lime.

(b) The container becomes hot because a large amount of heat is released during this reaction.

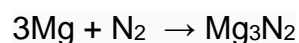
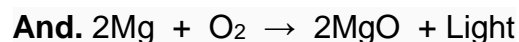
(ii) The product formed is slaked lime for which the chemical formula is Ca(OH)₂.



Q.10. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.

(i) Write the chemical formulae of X and Y.

(ii) Write the balanced chemical equation when X is dissolved in water.

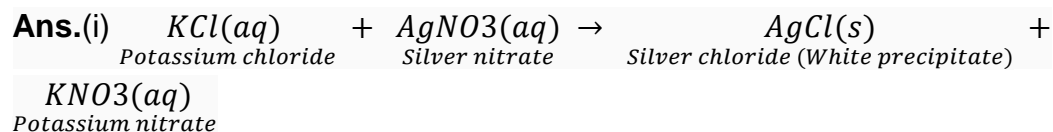


- X is MgO; Y is Mg₃N₂
- $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$

Q. 11. Identify the type of chemical reaction taking place

(i) on mixing a solution of potassium chloride with silver nitrate, and insoluble white substance is formed.

(ii) on heating green coloured ferrous sulphate crystals, reddish-brown solid is left and smell of a gas having odour of burning sulphur is observed.

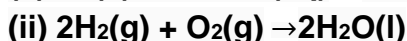
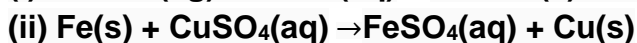
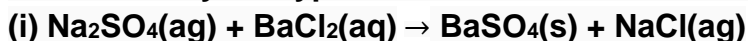


This reaction is an example of double displacement and precipitation reaction in which a precipitate of silver chloride is obtained.



This reaction is an example of decomposition (thermal decomposition) reaction because a single substance (FeSO_4) breaks down into three substances (Fe_2O_3 , SO_2 and SO_3). Here, SO_2 gives the smell of burning sulphur.

Q. 12. Identify the type of reaction in the following examples:



Ans. (i) Double displacement reaction

(ii) Displacement reaction

(iii) Combination reaction

Q. 13. During the reaction of some metals with dilute hydrochloric acid, following observations were made.

(i) The temperature of the reaction mixture rises when aluminium (Al) is added.

(ii) The reaction of sodium metal is found to be highly explosive.

(iii) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.

Explain these observations giving suitable reasons.

Ans. (i) The temperature of the reaction mixture rises when aluminium is added because it is an exothermic reaction.

(ii) Reaction of sodium metal is found to be highly explosive because it is an exothermic reaction.

(iii) When lead is treated with hydrochloric acid, bubbles of hydrogen gas are evolved.



Short Answer Type Questions – II

[3 Marks]

Q. 1. Translate the following statements into chemical equations and balance them:

(i) Lead nitrate reacts with sulphuric acid to form a precipitate of lead sulphate and nitric acid.

(ii) Magnesium burns in the presence of nitrogen to form magnesium nitride.

(iii) Aluminium metal strip is added in hydrochloric acid to produce aluminium chloride and hydrogen gas.

Ans. (i) $\text{Pb}(\text{NO}_3)_2(\text{aq}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{PbSO}_4(\text{s}) + 2\text{HNO}_3(\text{aq})$

(ii) $3 \text{Mg}(\text{s}) + \text{N}_2(\text{g}) \xrightarrow{\Delta} \text{Mg}_3\text{N}_2(\text{s})$

(iii) $2\text{Al}(\text{s}) + 6\text{HCl}(\text{aq}) \rightarrow 2\text{AlCl}_3(\text{aq}) + 3\text{H}_2(\text{g})$

Q. 2. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

(i) nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773 K to form ammonia gas.

(ii) Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

(iii) Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated H_2SO_4 .

(iv) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

Ans. (i) $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \xrightarrow[773 \text{ K}]{\text{catalyst}} 2\text{NH}_3(\text{g})$

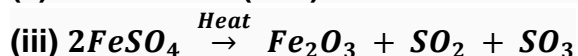
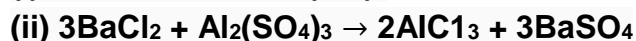
(ii) $\text{NaOH}(\text{aq}) + \text{CH}_3\text{COOH}(\text{aq}) \rightarrow \text{CH}_3\text{COONa}(\text{aq}) + \text{H}_2\text{O}(\text{l})$
Double displaced reaction/Neutralisation reaction

(iii) $\text{C}_2\text{H}_5\text{OH}(\text{l}) + \text{CH}_3\text{COOH}(\text{l}) \xrightarrow{\text{H}^+} \text{CH}_3\text{COOC}_2\text{H}_5(\text{l}) + \text{H}_2\text{O}(\text{l})$
Double displaced reaction/Esterification reaction

(iv) $\text{C}_2\text{H}_4(\text{g}) + 3\text{O}_2(\text{g}) \rightarrow 2\text{CO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g}) + \text{Heat} + \text{light}$

Redox reaction /Combustion reaction

Q.3. Name the type of chemical reaction represented by the following equation:



Ans. (i) Combination reaction

(ii) Double displacement reaction

(iii) Decomposition reaction

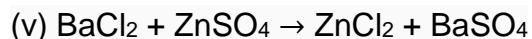
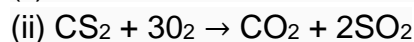
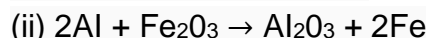
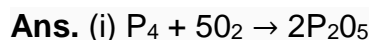
Q. 4. Translate the following statements into chemical equations and then balance the equations:

(i) Phosphorus burns in oxygen to give phosphorus pentoxide.

(ii) Aluminium metal replaces iron from ferric oxide, Fe_2O_3 , giving aluminium oxide and iron.

(iii) Carbon disulphide burns in air to give carbon dioxide and sulphur dioxide.

(iv) Barium chloride reacts with zinc sulphate to give zinc chloride and barium sulphate.



Q.5. (i) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube?

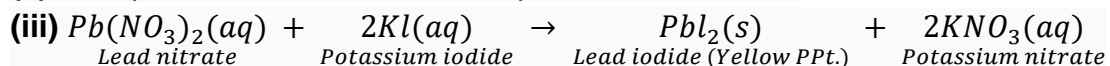
(ii) What type of reaction is this?

(iii) Write a balanced chemical equation to represent the above reaction.

Ans:

(i) A yellow precipitate of lead iodide (PbI_2) is formed.

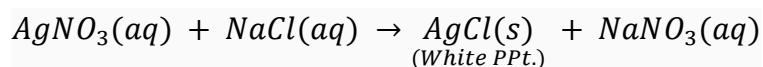
(ii) Precipitation reaction/Double displacement reaction.



Q.6. (i) What happens when silver nitrate solution is added to sodium chloride solution? Write the equation for the reaction which takes place.

(ii) Name the type of reaction involved.

Ans. (i) When silver nitrate solution is added to sodium chloride solution, a white precipitate of silver chloride is formed along with sodium nitrate solution.



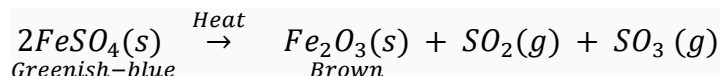
(ii) This is double displacement reaction.

Q.7. (i) What is the colour of ferrous sulphate crystals? How does this colour change after heating?

(ii) Name the products formed on strongly heating ferrous sulphate crystals. What type of chemical reaction occurs in this change?

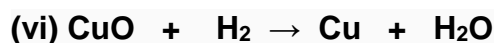
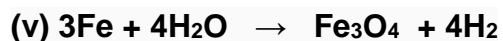
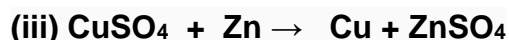
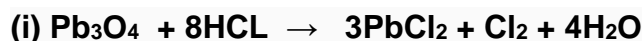
Ans. (i) The colour of ferrous sulphate crystals is green. On heating, $FeSO_4 \cdot 7H_2O$ first decomposes to form anhydrous ferrous sulphate ($FeSO_4$) which is white in colour.

(ii) The products formed on strongly heating ferrous sulphate crystals are ferric oxide, sulphur dioxide and sulphur trioxide.



This is a type of decomposition reaction (thermal decomposition).

Q. 8. Identify the oxidizing agent (oxidant) in the following reactions.



Ans. (i) Pb_3O_4

(ii) O_2

(iii) $CuSO_4$

(iv) V_2O_5

(v) H_2O

(vi) CuO

Q. 9. Solid calcium oxide was taken in a container and water was added slowly to it,

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

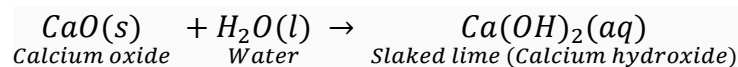
(ii) Write the name and chemical formula of the product formed.

Ans. (i) Following are the two observations:

(a) Calcium oxide (CaO) reacts vigorously with water to form slaked lime.

(b) The container becomes hot because a large amount of heat is released during this reaction.

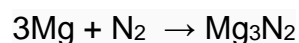
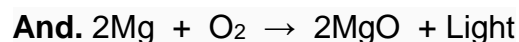
(ii) The product formed is slaked lime for which the chemical formula is Ca(OH)₂.



Q.10. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.

(i) Write the chemical formulae of X and Y.

(ii) Write the balanced chemical equation when X is dissolved in water.

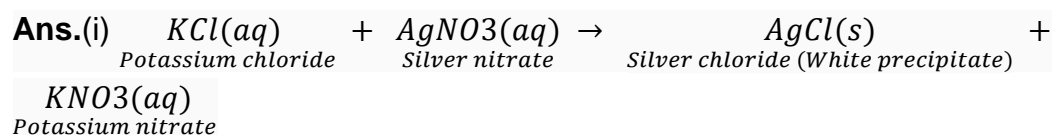


- X is MgO; Y is Mg₃N₂
- $\text{MgO} + \text{H}_2\text{O} \rightarrow \text{Mg}(\text{OH})_2$

Q. 11. Identify the type of chemical reaction taking place

(i) on mixing a solution of potassium chloride with silver nitrate, and insoluble white substance is formed.

(ii) on heating green coloured ferrous sulphate crystals, reddish-brown solid is left and smell of a gas having odour of burning sulphur is observed.

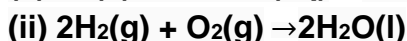
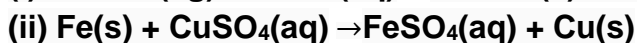
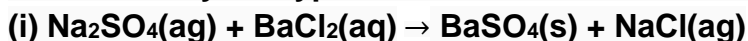


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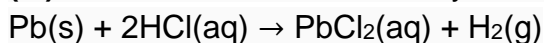
(iii) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.

Explain these observations giving suitable reasons.

Ans. (i) The temperature of the reaction mixture rises when aluminium is added because it is an exothermic reaction.

(ii) Reaction of sodium metal is found to be highly explosive because it is an exothermic reaction.

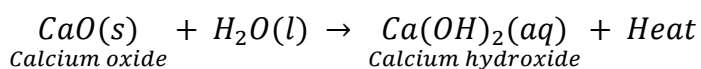
(iii) When lead is treated with hydrochloric acid, bubbles of hydrogen gas are evolved.



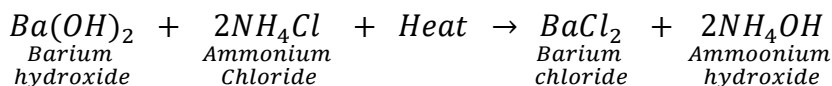
'C' is CaCO_3 .

Q.5. When CaO is added to water taken in a beaker, rise in temperature is observed. However, when $\text{Ba}(\text{OH})_2$ is mixed NH_4Cl , a fall in temperature is observed. Why?

Ans. Reaction of CaO and water is an exothermic reaction. So, rise in temperature is observed.



Reaction of $\text{Ba}(\text{OH})_2$ and NH_4Cl is an endothermic reaction and hence fall in temperature is observed.



Q.6. A brown substance 'X' on heating in air forms a substance 'Y'. When hydrogen gas is passed over heated 'Y', it again changes back into 'X'.

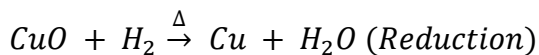
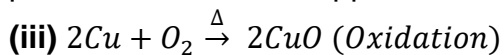
(i) Name the substance 'X' and 'Y'.

(ii) Name the type of chemical reaction occurring during both the changes.

(iii) Write the chemical equations of the reactions.

Ans. (i) X-Cu; Y-CuO.

(ii) When copper is heated in air, oxidation takes place. When hydrogen gas is passed over heated copper oxide, reduction takes place.



Value Based Questions

Q. 1. Sheena was very excited to see her Aunt after a long time. Her mother fried a lot of snacks for her Aunt. Suddenly Sheena came to know that her aunt has postponed her plan for tomorrow. Sheena's mother got worried to know this. She thought the food will get spoiled. Sheena helped her mother to preserve the food.

Answer the following questions based on above passage.

- (i) Why does food spoil when kept for a very long time?**
- (ii) What method did Sheena suggest her mother to preserve the food?**
- (iii) What values are shown by Sheena?**

Ans. (i) When food is kept for a very long time, it gets oxidised and becomes rancid.

(ii) Sheena suggested her mother to keep the snacks in an air tight container.

(iii) Intelligency, applying knowledge, helpful.