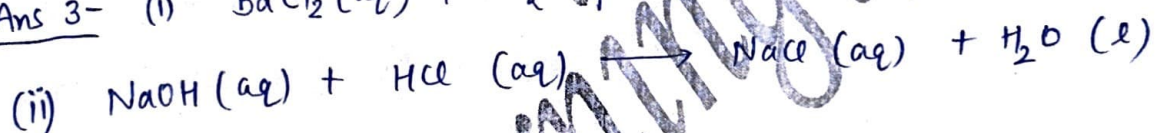
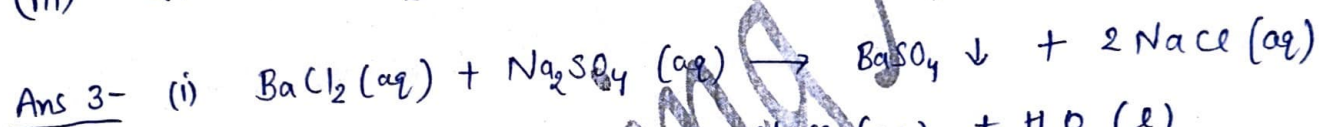
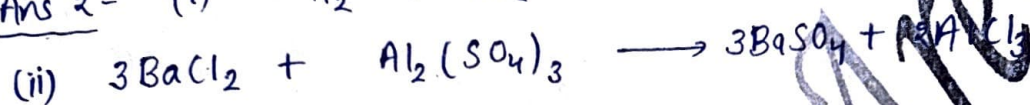
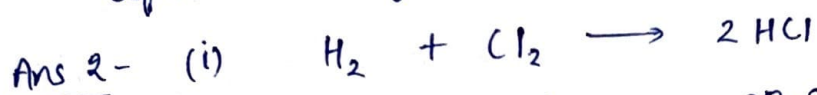


CHAPTER - 1

1.

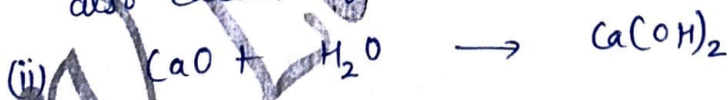
Box 1 :-

Ans 1- Magnesium ribbon reacts with air to form a protective oxide layer. This layer is unreactive & prevents the ribbon from burning. Hence magnesium ribbon needs to be cleaned with sand paper before burning in air.



Box 2 :-

Ans 1- (i) Substance 'X' is calcium oxide (CaO). It is also called quicklime.

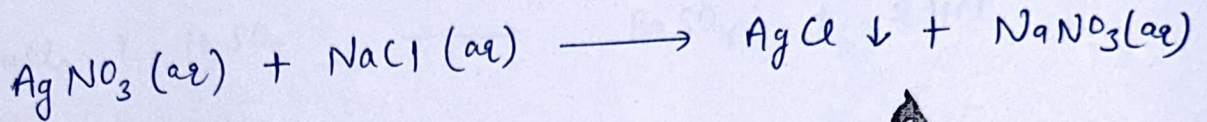
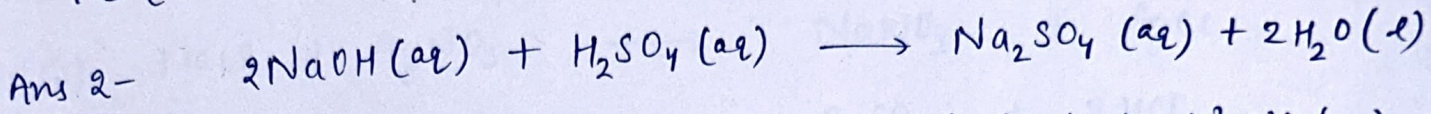
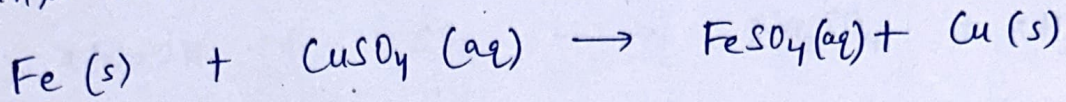


Ans 2- The chemical formula of water (H_2O) suggests that molar ratio of hydrogen & oxygen is 2:1. Therefore, when water is electrolysed, hydrogen & oxygen are produced in the same ratio i.e. 2:1. So the volume of hydrogen gas produced is double than that of oxygen gas.

Box 3 :-

Ans 1- Iron is more reactive than copper. So iron displaces copper from its salt solution. A displacement reaction takes place. So the colour of the copper

Sulphate solution changes when iron nails are dipped into it.



Ans 3- (i) Na is oxidised & O_2 is reduced

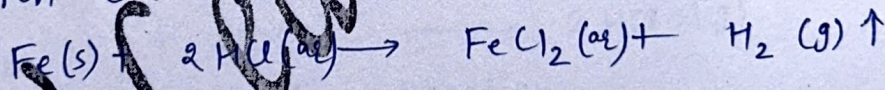
(ii) CuO is reduced & H_2 is oxidised

Exercise Questions

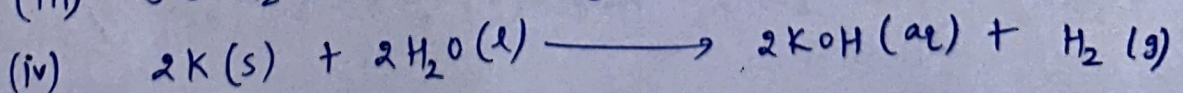
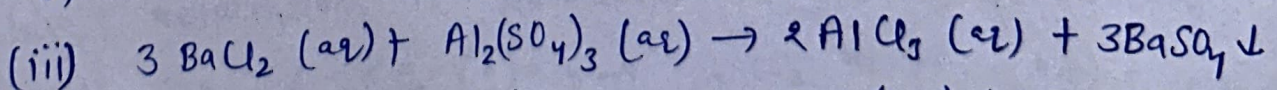
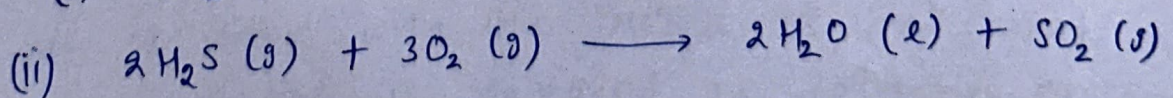
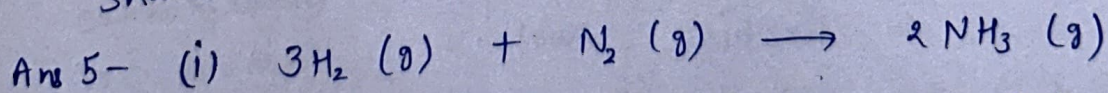
Ans 1- Carbon is getting oxidised & lead oxide is getting reduced.

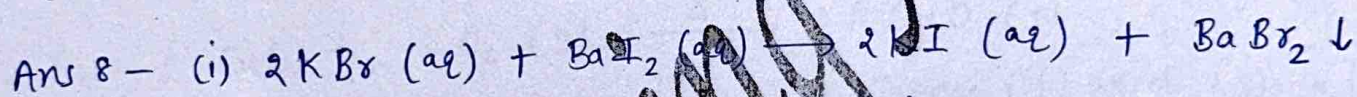
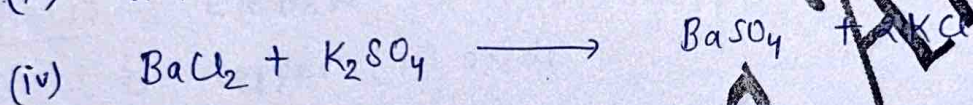
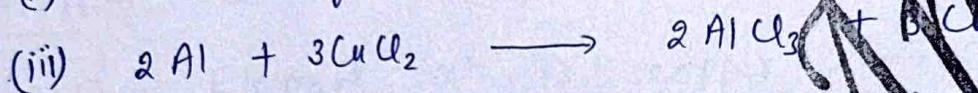
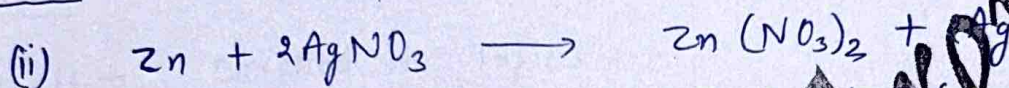
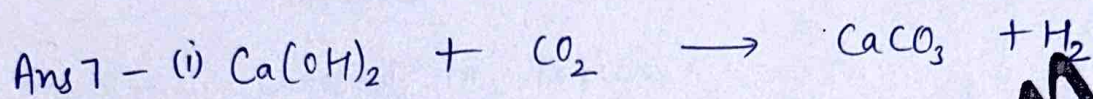
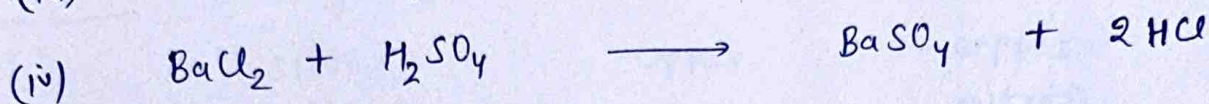
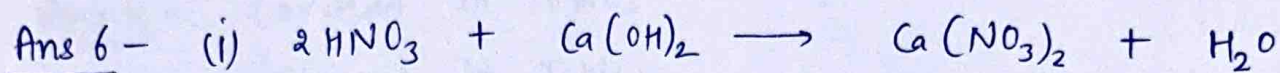
Ans 2- displacement reaction

Ans 3- When iron filings & hydrochloric acid react, iron chloride & hydrogen gas is formed.

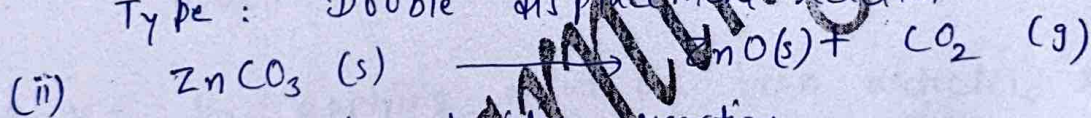


Ans 4- If the number of atoms in the reactant is equal to the number of atoms in the product, the equation is said to be balanced chemical equation. Law of conservation of mass states that total mass of reactants is always to total mass of products in a chemical reaction. To validate the law of conservation of mass, the chemical equations should be balanced.





Type: Double displacement reaction



Type: decomposition reaction



Type: combination reaction



Type: displacement reaction

Ans 9 - Covered in Topics

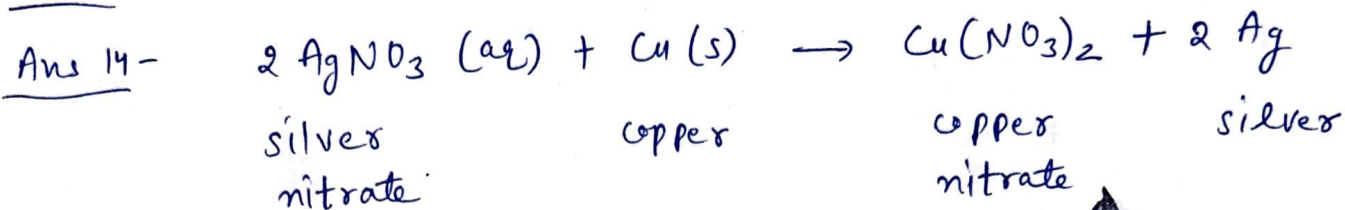
Ans 10 - The food that we eat like rice, potato, bread etc contains carbohydrates. On digestion, carbohydrates are converted to glucose. The glucose so formed is slowly oxidised to form carbon dioxide & water with the release of heat energy. Thus, respiration is considered an exothermic reaction.



Ans 11 - Covered in Topics

Ans 12 - Covered in Topics

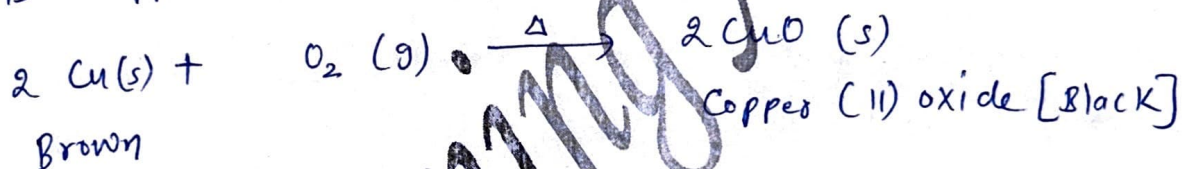
Ans 13 - Covered in Topics



Ans 15 - Covered in Topics

Ans 16 - Covered in Topics

Ans 17 - Element 'X' is copper & black coloured compound is copper (II) oxide.



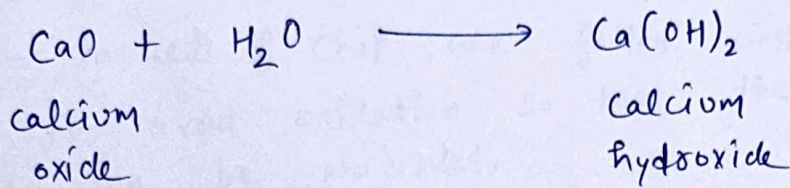
Ans 18 - By applying paint on iron articles, they can be prevented from corrosion (rusting). Paint does not allow oxygen (from air) & water (moisture) to come in direct contact with the surface of iron.

Ans 19 - Nitrogen gas is unreactive as compared to oxygen. Oil & fats present in the food items get oxidised & become rancid in presence of oxygen but this reaction is prevented by the presence of oxygen. So oil & fat containing food items are flushed with nitrogen.

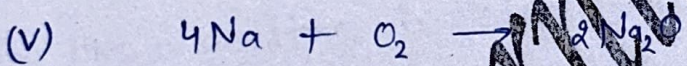
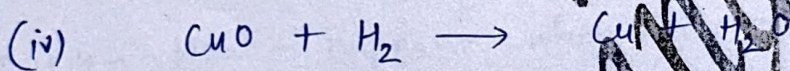
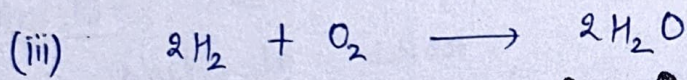
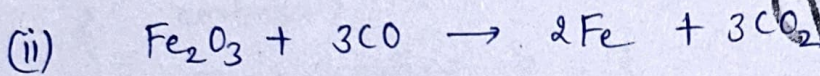
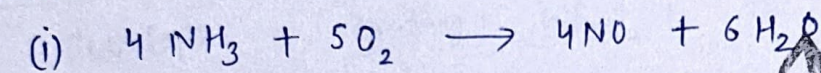
Ans 20 - Covered in Topics.

Ques 8- A substance 'X' which is an oxide of a metal present in our bones, reacts with water. Name the substance & write the reaction.

Ans 8- X = CaO (calcium is present in our bones)

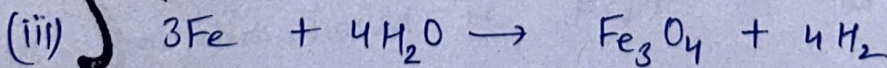
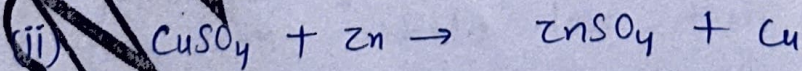
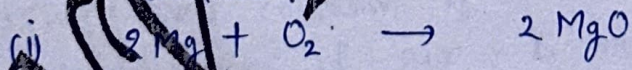


Ques 9- Name the reducing agents in the following reactions:



Ans 9- (i) NH₃ (ii) CO (iii) H₂ (iv) H₂ (v) Na

Ques 10- Identify the oxidising agents in the following reactions:



Ans 10- (i) O₂ (ii) CuSO₄ (iii) H₂O (iv) CuO (v) ZnO

Ques 11- What happens when quicklime is added to water?

Ans 11- Quicklime reacts vigorously with water to

Ques 18- A green coating develops on the copper vessel in the rainy season. Why? 8.

Ans 18- Copper reacts with moist air [CO_2] in rainy season & a green coating is formed. This is due to the formation of copper carbonate.

Ques 19- In the electrolysis of water:

(i) Name the gas collected at cathode & anode.

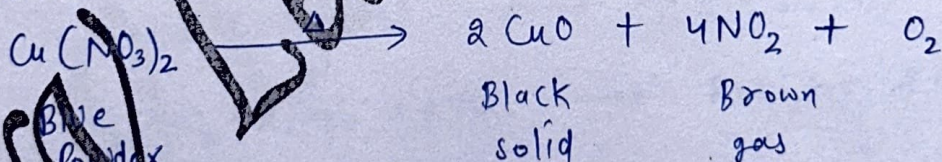
(ii) Why are a few drops of dilute H_2SO_4 added to water?

Ans 19- (i) At Cathode \rightarrow hydrogen At Anode \rightarrow oxygen

(ii) Pure water does not conduct electricity. A few drops of dilute H_2SO_4 are added to make water conducting.

Ques 20- What happens when blue coloured powder of copper nitrate is heated in a test tube?

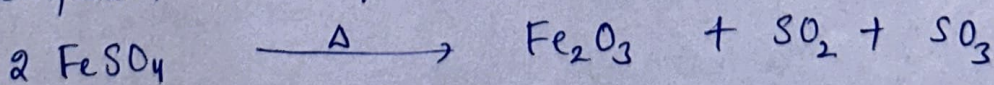
Ans 20- The thermal decomposition of copper nitrate takes place.



*** CuO is red in colour.

Ques 21- What happens when ferrous sulphate (FeSO_4) is heated in a hard glass test tube?

Ans 21- When ferrous sulphate is heated, its thermal decomposition takes place.



The colour of ferrous sulphate is green. When it is heated, it becomes black.

Ques 24 - Identify the exothermic & endothermic processes: ^{10.}

- (i) Decomposition of ferrous sulphate
- (ii) Dilution of sulphuric acid
- (iii) Dilution of sodium hydroxide in water
- (iv) Reaction of quicklime & water

Ans 24 - (i) Endothermic (ii) exothermic (iii) exothermic
(iv) exothermic

Ques 25 - Balance the following skeletal equations:

- (i) $Mg + O_2 \rightarrow MgO$
- (ii) $Cu + O_2 \rightarrow CuO$
- (iii) $H_2 + O_2 \rightarrow H_2O$
- (iv) $Na + O_2 \rightarrow Na_2O$
- (v) $H_2 + Cl_2 \rightarrow HCl$
- (vi) $Na + H_2O \rightarrow NaOH + H_2$
- (vii) $K + H_2O \rightarrow KOH + H_2$
- (viii) $PbO + C \rightarrow Pb + CO_2$
- (ix) $Fe_2O_3 + Al \rightarrow Al_2O_3 + Fe$
- (x) $N_2 + H_2 \rightarrow NH_3$
- (xi) $H_2S + O_2 \rightarrow H_2O + SO_2$
- (xii) $BaCl_2 + Al_2(SO_4)_3 \rightarrow AlCl_3 + BaSO_4$
- (xiii) $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$
- (xiv) $KBr + BaI_2 \rightarrow KI + BaBr_2$
- (xv) $SO_2 + O_2 \rightarrow SO_3$