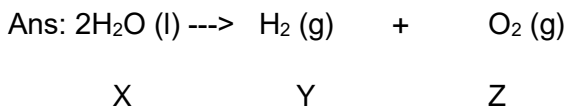
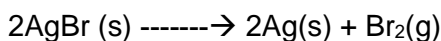


10th Chemical Reaction and Equation questions with solution 03

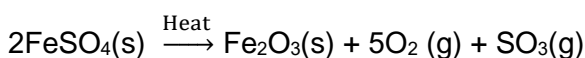
1. A compound 'X' is used for drinking, has pH = 7. Its acidified solution undergoes decomposition in presence of electricity to produce gases 'Y' and 'Z'. The volume of Y is double than Z. Y is highly combustible whereas Z is supporter of combustion. Identify X, Y & Z and write the chemical reactions involved.



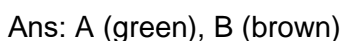
2. An aqueous solution of metal nitrate P reacts with sodium bromide solution to form yellow ppt of compound Q which is used in photography. Q on exposure to sunlight undergoes decomposition reaction to form metal present in P along with reddish brown gas. Identify P & Q. Write the chemical reaction & type of chemical reaction.



Photochemical decomposition



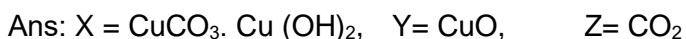
3. Bhawana took a pale green substance A in a test tube and heated it over the flame of a burner. A brown colored residue B was formed along with evolution of two gases with burning smell of sulphur. Identify A & B. Write the chemical reaction involved.



4. A student took 2-3 g of a substance X in a glass beaker & poured water over it slowly. He observed bubbles along with hissing noise. The beaker becomes quite hot. Identify X. What type of reaction is it?



5. A reddish brown vessel developed a green colored solid X when left open in air for a long time. When reacted with dil H₂SO₄, it forms a blue colored solution along with brisk effervescence due to colourless and odourless gas Z. X decomposes to form black colored oxide Y of a reddish brown metal along with gas Z, Identify X, Y, & Z.



6. A substance X used for coating iron articles is added to a blue solution of a reddish brown metal Y, the color of the solution gets discharged. Identify X and Y & also the type of reaction.



7. A student has mixed the solutions of lead (II) nitrate and potassium iodide.

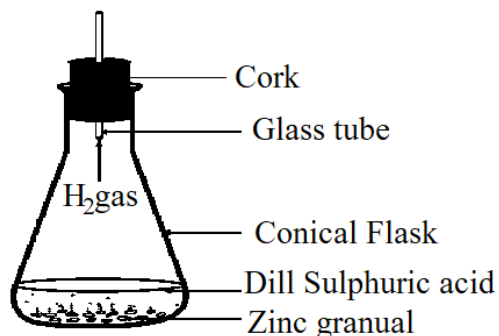
(i) What was the colour of the precipitate formed? Can you name the compound precipitated?

(ii) Write the balanced chemical equation for this reaction. (iii) What type of reaction is it?

Ans: (i). Yellow, Lead iodide (ii) $Pb(NO_3)_2 + KI \rightarrow PbI_2 + 2KNO_3$ (iii) Double displacement reaction

8. Observe the following activity & answer the questions

- Do you observe anything happening around the zinc granules?
- Is there any change in its temperature?
- Why is glass tube not dipped in dil H_2SO_4 ?
- How is H_2 gas collected by downward displacement or upward displacement of water?
- Is H_2 gas soluble or insoluble in water?
- Is H_2 gas heavier or lighter than air?



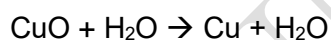
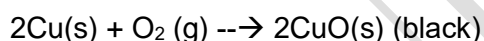
Ans (a) Bubbles of hydrogen gas. (b) Yes temperature will increase.

(c) H_2SO_4 will rise in glass tube, preventing H_2 to evolve (d) downward displacement

(e) Insoluble (f) lighter than air

9. A reddish brown metal X when heated in presence of oxygen forms a black compound Y which is basic in nature when heated with hydrogen gas gives back X. Identify X & Y. Write the chemical reaction between Y & H_2 . Identify the substance being oxidized & reduced.

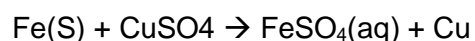
Ans: Oxygen reacts with copper to form copper oxides which has black colour



The copper (II) oxide is losing oxygen and is being reduced. The hydrogen is gaining oxygen and is being oxidized.

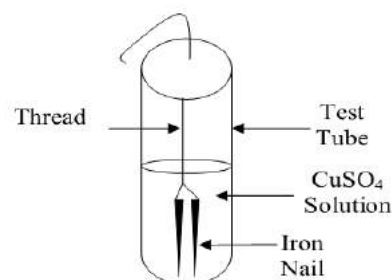
10. Name the type of reaction seen in the diagram below. Write the reaction for the same.

Ans: Displacement Reaction



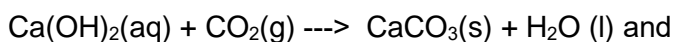
11. A student burnt a metal A found in the form of ribbon. The ribbon burnt with a dazzling flame & a white powder B is formed which is basic in nature. Identify A and B. Write the balanced chemical equation.

Ans: X = Mg, Y = MgO, $Mg + O_2 \rightarrow 2MgO$



12. A student dropped few pieces of marble in dilute HCl contained in a test tube. The gas evolved was passed through lime water. What change would be observed in lime water? Write chemical reactions for both the changes observed.

Ans: (i) Lime water turns milky.

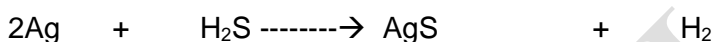


13. Astha has been collecting silver coins and copper coins. One day she observed a black coating on silver coins and a green coating on copper coins. Which chemical phenomenon is responsible for these coatings? Write the chemical name of black and green coatings

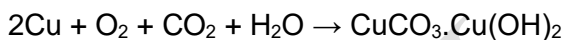
Ans The phenomenon is called corrosion (oxidation).

Black coating on silver coins is due to formation of silver sulphide and Green coating on copper coins is basic copper oxide.

Silver reacts with hydrogen sulphide present in the air to form a layer of silver sulphide which is black in colour on the surface of the silver article due to which it appears black (corrosion of silver).

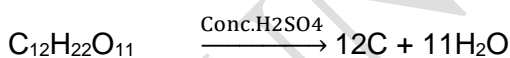


When copper metal is exposed to moist air, a green layer is developed on it due to formation of basic copper carbonate (corrosion of copper). The reaction is as follows:



14. When concentrated sulphuric acid is added to sugar?

Answer: sugar becomes a black mass of sugar charcoal. The acid removes all the hydrogen and oxygen (as water) from the sugar and absorbs it leaving a residue of spongy carbon



15. What happens when a small piece (pea size) of sodium is placed in cold water?

Answer: it darts about on the water with a hissing sound and produces hydrogen. The water left behind, acquires the property of turning red litmus blue. This shows the presence of a basic substance, which is sodium hydroxide. $2\text{Na} + 2\text{H}_2\text{O} \longrightarrow 2\text{NaOH} + \text{H}_2$

16. Why is magnesium ribbon cleaned before burning?

Ans: The magnesium ribbon is always found with a white layer of MgO due to attack of moist air. So, magnesium ribbon is cleaned before burning.

17. During electrolysis of water, the gas collected in one test tube is double that of the other. Why?

Ans: On electrolysis, water decomposes into hydrogen and oxygen in a ratio of 2:1 by volume. So, H₂ gas collected in one test tube is double that of O₂.