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9. What happens when

(a) Dilute sulphuric acid is poured on a copper plate?

(b) Iron nails are placed in copper sulphate solution?

Write word equations of the reactions involved.

Answer:

(a) When dilute sulphuric acid is poured on a copper plate, there will be no reaction between copper and dilute sulphuric acid as copper is less reactive and hence no products will be formed.

(b) Iron being more reactive displaces copper from copper sulphate solution. In this reaction, the blue colour of copper sulphate fades and there is deposition of copper on the iron nail.

Iron (Fe) + Copper Sulphate (CuSO_4) \rightarrow Iron Sulphate (FeSO_4) +

Copper (Cu)

10. Saloni took a piece of burning charcoal and collected the gas evolved in a test tube.

(a) How will she find the nature of the gas?

(b) Write down word equations of all the reactions taking place in this process.

Answer:

(a) Add a few drops of water in the test tube containing gas. Now, cover the test tube and shake it well. After shaking, test the solution with blue litmus and red litmus. It will turn blue litmus red. Thus, the gas is acidic in nature.

(b) Charcoal reacts with oxygen to form carbon dioxide gas.

$\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

(Carbon from Charcoal) + Oxygen \rightarrow Carbon Dioxide

Carbon dioxide reacts with water to form carbonic acid, which turns blue litmus paper red.

$\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$

(Carbon Dioxide) + Water \rightarrow (Carbonic Acid - turns blue litmus red)

11. One day Reeta went to a jeweller's shop with her mother. Her mother gave an old gold jewellery to the goldsmith to polish. Next day when they brought the jewellery back, they found that there was a slight loss in its weight. Can you suggest a reason for the loss in weight?

Answer:

To polish a gold ornament, it is dipped in a liquid called aqua regia (a mixture of hydrochloric acid and nitric acid). On getting the environment of aqua regia, the outer layer of gold dissolves and the inner shiny layer appears. The dissolving of the layer causes a reduction in the weight of the jewellery.

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