

1. One day Reeta went to a jeweller's shop with her mother. Her mother gave an old gold jewellery to 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 : Gold smith used aqua-regia solution which is a mixture of concentrated hydrochloric acid and concentrated nitric acid (in the ratio 3: 1), to wash her mother's jewellery. Usually gold does not react with acids.

When gold jewellery was dipped in aqua regia, the outer dull layer dissolved in aqua regia and the inner shiny layer appeared. Due to this, some gold was lost during polishing process. This caused slight reduction in its weight.

2. An element burns in air to form an oxide. The aqueous solution of this oxide turns phenolphthalein pink. State whether the element is a metal or non-metal. Give one example of such element.

Answer :

The element is a metal.

When a metal burns in air, it forms metal oxide, which has basic oxide.

When metal oxide is dissolved in water, it forms aqueous solution of corresponding metal hydroxide , which is a base. So, it turns phenolphthalein, pink colour.

Example :

Magnesium + Oxygen -----> Magnesium oxide

Magnesium oxide + water -----> Magnesium hydroxide
(basic)

The basic magnesium hydroxide turns phenolphthalein indicator,
pink.