

# CHEMISTRY STUDY MATERIALS FOR CLASS 10

## (NCERT Based notes of Chapter -02)

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### ACIDS, BASES AND SALTS

#### INTEXT QUESTIONS PAGE NO. 33

**Question 1: What is the common name of the compound  $\text{CaOCl}_2$ ?**

**Answer :** The common name of the compound  $\text{CaOCl}_2$  is bleaching powder.

**Question 2: Name the substance which on treatment with chlorine yields bleaching powder?**

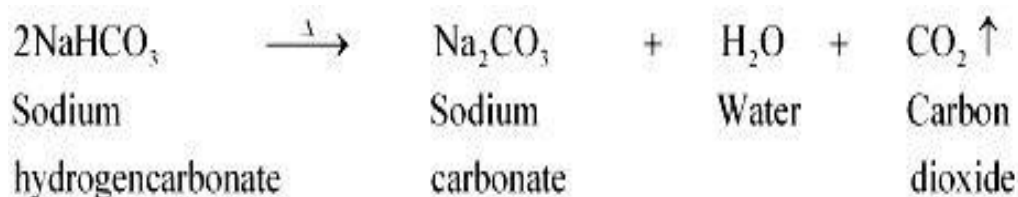
**Answer :** Calcium hydroxide [ $\text{Ca}(\text{OH})_2$ ], on treatment with chlorine, yields bleaching powder.

**Question 3: Name the sodium compound which is used for softening hard water.**

**Answer :** Washing soda ( $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ ) is used for softening hard water.

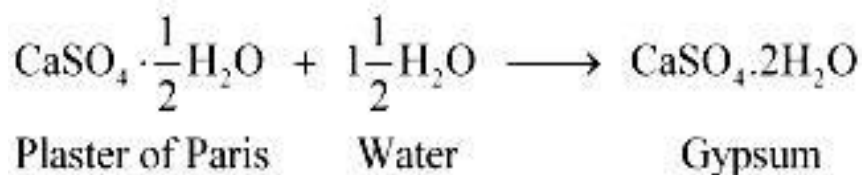
**Question 4: What will happen if a solution of sodium hydro carbonate is heated? Give the equation of the reaction involved.**

**Answer :** When a solution of sodium hydro carbonate (sodium hydrogen carbonate) is heated, sodium carbonate and water are formed with the evolution of carbon dioxide gas.



**Question 5: Write an equation to show the reaction between Plaster of Paris and water.**

**Answer :** The chemical equation for the reaction of Plaster of Paris and water can be represented as



### **EXERCISE QUESTIONS PAGE NO. 34 and 35**

**Question 1: A solution turns red litmus blue; its pH is likely to be**

- (a) 1 (b) 4 (c) 5 (d) 10**

**Answer :** (d) Bases turn red litmus blue and acids turn blue litmus red. Basic solution has a pH value more than 7. Since the solution turns red litmus blue, its pH is likely to be 10.

**Question 2: A solution reacts with crushed egg-shells to give a gas that turns lime-water milky. The solution contains**

- (a) NaCl (b) HCl (c) LiCl (d) KCl**

**Answer :** (b) The solution contains HCl.

**Question 3: 10 ml of a solution of NaOH is found to be completely neutralized by 8 ml of a given solution of HCl. If we take 20 mL of the same solution of NaOH, the amount of HCl solution (the same solution as before) required to neutralize it will be**

- (a) 4 ml (b) 8ml (c) 12 ml (d) 16 ml**

**Answer :** (d) 16 ml of HCl solution will be required.

**Question 4: Which one of the following types of medicines is used for treating indigestion?**

- (a) Antibiotic    (b) Analgesic    (c) Antacid    (d) Antiseptic**

**Answer :** (c) Antacid is used for treating indigestion.

**Question 5: Write word equations and then balanced equations for the reaction taking place when –**

**(a) dilute sulphuric acid reacts with zinc granules.**

**(b) dilute hydrochloric acid reacts with magnesium ribbon.**

**(c) dilute sulphuric acid reacts with aluminium powder.**

**(d) dilute hydrochloric acid reacts with iron filings.**

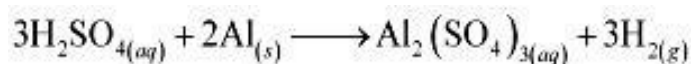
**Answer :** (a) Sulphuric acid + Zinc → Zinc sulphate + Hydrogen



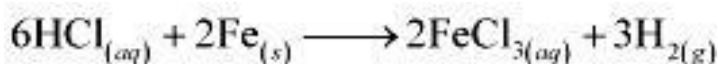
**(b) Hydrochloric acid + Magnesium → Magnesium chloride + Hydrogen**



**(c) Sulphuric acid + Aluminium → Aluminium sulphate + Hydrogen**



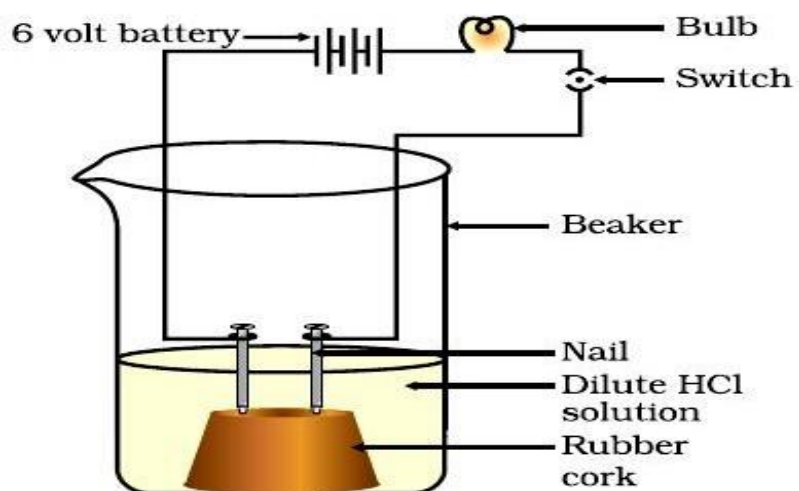
**(d) Hydrochloric acid + Iron → Ferric chloride + Hydrogen**



**Question 6: Compounds such as alcohols and glucose also contain hydrogen but are not categorized as acids. Describe an activity to prove it.**

**Answer :** Two nails are fitted on a cork and are kept it in a 100 ml beaker. The nails are then connected to the two terminals of a 6-volt battery through a bulb and a switch. Some dilute HCl is poured in the beaker and the current is switched on. The same experiment is then performed with glucose solution and alcohol solution.

**Observations:**



**Result:**

HCl dissociates into  $H^+$  and  $Cl^-$  ions. These ions conduct electricity in the solution resulting in the glowing of the bulb. On the other hand, the glucose solution does not dissociate into ions. Therefore, it does not conduct electricity.

**Conclusion:**

From this activity, it can be concluded that all acids contain hydrogen but not all compounds containing hydrogen are acids.

That is why, though alcohols and glucose contain hydrogen, they are not categorized as acids.

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