**Topics: Acids, Bases and Salts**
**Subtopics:More about Salts**

**Questions**

Q1.A milkman adds a very small amount of baking soda to fresh milk.
(a) Why does he shift the pH of the fresh milk from 6 to slightly alkaline ?
(b) Why does this milk take a long time to set as curd ?

Q2. Plaster of Paris should be stored in a moisture proof container. Explain why?

Q3. Give two important uses of washing soda and baking soda.

Q4. What will happen if a solution of sodium hydrogen carbonate is heated? Give the equation of the reaction involved ?

Q5.Name the sodium compound which is used for softening hard water.

Q6. Write an equation to show the reaction between plaster of Paris and water.

Q7.(i) Give the constituents of baking powder
(ii) Why does cake or bread swell on adding baking powder? Write a chemical equation.

Q8. Write the chemical equation involved in the preparation of sodium hydroxide. Name the process.

Q9.A gas 'X' reacts with lime water and forms a compound 'Y' which is used as a bleaching agent in the chemical industry. Identify 'X' and 'Y.Give the chemical equation of the reactions involved.

Q10.What is meant by 'water of crystallisation' of a substance ?

**Answers**

1.(a) Milk is made slightly alkaline by adding baking soda so that it may not get sour easily as baking soda is a basic salt.
(b) The alkaline milk takes a longer time to set into curd because the lactic acid being formed has to first neutralise the alkali present in it.

2. Plaster of Paris should be stored in a moisture proof container because the presence of moisture can cause slow setting of plaster of Paris. This will make the plaster of Paris useless after some time as it will not harden.

3. Uses of washing soda :
(i) Washing soda is used in glass, soap and paper industries.
(ii) It is used for removing permanent hardness of water.
Uses of baking soda :
(i) Baking soda is used as an antacid in medicines to remove acidity of the stomach.
(ii) Baking soda is used for making baking powder (used in making cakes, bread, etc.).

4.Solution of sodium hydrogen carbonate on heating gives sodium carbonate and carbon dioxide gas is evolved.

$$\underset{\text{Sodium hydrogen carbonate}}{2\,NaHCO_3} \xrightarrow{\text{Heat}} \underset{\text{Sodium carbonate}}{Na_2CO_3} + H_2O + CO_2$$

5.Sodium carbonate can be used to soften hard water.

6.

$$\underset{\text{Plaster of Paris}}{CaSO_4 \cdot \frac{1}{2}H_2O} + 1\frac{1}{2}H_2O \longrightarrow \underset{\text{Gypsum}}{CaSO_4 \cdot 2H_2O}$$

7. (i) Baking powder contains sodium hydrogen carbonate and tartaric acid.

(ii)It is due to the formation of carbon dioxide formed on heating baking soda.

$$\underset{\text{Sodium hydrogen carbonate}}{2\,NaHCO_3} \xrightarrow{\text{Heat}} \underset{\text{Sodium carbonate}}{Na_2CO_3} + H_2O + CO_2$$

8.

$$2NaCl(aq) + 2H_2O(l) \xrightarrow{\text{electrolysis}} 2NaOH(aq) + H_2(g) + Cl_2(g)$$

It is called chlor-alkali process.

9.

**Answer.** 'X' is chlorine; 'Y' is bleaching powder.

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$$Ca(OH)_2 + \underset{\text{'X'}}{Cl_2} \longrightarrow \underset{\text{'Y'}}{CaOCl_2} + H_2O$$

10. A definite number of water molecules loosely bound to a salt giving it a crystalline structure are called water of crystallisation. Example:

$$CuSO_4.5H_2O$$

Blue vitriol