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# NCERT Class 10 Chapter 2 Acids; Bases and Salts CBSE Board Sample Problems Short Answer (For CBSE, ICSE, IAS, NET, NRA 2022)

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## Question

**Name one natural source of each of following:**

- i) Citric acid
- ii) Oxalic acid
- iii) Lactic acid
- iv) Tartaric acid

## Solution

- i) Citrus fruits like lemon, orange
- ii) Tomato/Spinach
- iii) FVlilk
- iv) Tamarind (Imly)

## Question

**How many molecules of water of crystallization are present in?**

- a) Copper sulphate crystals
- b) Washing soda
- c) Gypsum

## Solution

- a) Five
- b) Ten
- c) Two

## Question

**What are hydrated and anhydrous salts? Give one example of each.**

## Solution

The salts which contain water of crystallization are called hydrated salts. For example:  
 $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$

The salts which have lost their water of crystallization are called anhydrous salts. For example



Here,  $\text{CuSO}_4$  is an anhydrous salt.

## Question

**Hydrochloric acid reacts with a metal X to form a gas Y, which burns with a 'pop' sound. Sodium hydroxide solution also reacts with same metal X to form same gas**

a) Name X and Y.

b) Write the chemical equation of reaction of metal X with i) HCl ii) NaOH

## Solution

a) Metal X is Zinc and Y is hydrogen gas



## Question

**(a) What is the action of litmus on?**

(i) Dry ammonia gas

(ii) Solution of ammonia gas in water

(b) State the observations you would make on adding sodium hydroxide to aqueous solution of

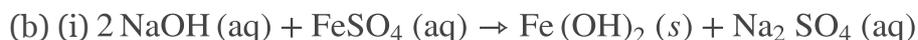
(i) Ferrous sulphate

(ii) Aluminium chloride. Give balanced chemical equations.

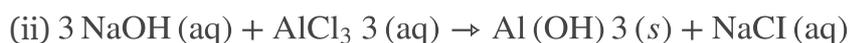
## Solution

(a) (i) No change in colour

(ii) Red litmus turns blue



Sodium hydroxide + Ferrous sulphate → Ferrous hydroxide + Sodium Sulphate



Sodium hydroxide + Aluminium chloride → Aluminium hydroxide + Sodiumchloride

## Question

**A white powder is added while baking breads and cakes to make them soft and fluffy. What is the name of the powder? What are the main ingredients in it? What are the functions of each ingredient?**

## Solution

Baking powder.

Baking soda and an edible acid like tartaric acid. Baking soda (  $\text{NaHCO}_3$  ) is used to release  $\text{CO}_2$  gas when heated. Tartaric acid is used to avoid the bitter taste by reacting with the  $\text{Na}_2\text{CO}_3$  formed.

## Question

**Name the raw materials that are required for the manufacture of washing soda by Solvay process. Describe the chemical reactions involved in the process.**

## Solution

The raw materials needed for the manufacture of washing soda are:  $\text{NaCl}$  (sodium chloride) , water, ammonia gas and limestone to give  $\text{CO}_2$  gas. Chemical reactions involved:



## Question

**Varun took a sample A and added dilute hydrochloric acid to it. A colorless, odorless gas X was evolved which turned lime water milky. Identify sample A and the gas X evolved. Write a chemical equation to explain the reaction between Sample A and Hydrochloric acid. Why does the gas X turn lime water milky?**

## Solution

The gas X is carbon dioxide and Sample A is metal carbonate.



$\text{CO}_2$  reacts with lime water to form insoluble calcium carbonate which is white in colour and results in milkiness

## Question

**(a) What is an olfactory indicator? Name two such indicators.**

**(b) Why does dry HCl not change the color of dry litmus paper?**

**(c) Write a chemical equation to show the reaction of plaster of Paris with water.**

**Give any two uses of plaster of Paris.**

### Solution

(a) The substance which changes its odour in the presence of acid or base is called olfactory indicator. Onion and clove oil.

(b) Dry HCl does not produce hydronium ions. So it does not produce acidic medium and so does not change the colour of dry litmus paper



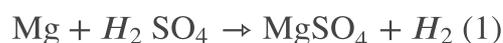
It is used by doctors in plasters to fix bones, used to make decorative ceilings and statues.

### Question

**Parth took equal lengths of Magnesium ribbon in test tubes A & B. Sulphuric acid is added to test tube A while acetic acid is added to test tube B. In which case would the reaction occur more vigorously and why? Write the chemical equations for reactions in test tube A. (3)**

### Solution

Reaction would be faster in test tube A (1) as Sulphuric acid is a strong acid (1/2) while Acetic acid is a weak acid (1/2)



### Question

**(a) Differentiate between acidic and basic salt with an example of each case.**

**(b) Write the chemical formula of plaster of Paris . Why should it not be left exposed to air?**

### Solution

(a) Acidic salts are formed by the neutralization reaction between a strong acid and a weak base. Eg Ammonium chloride whereas Basic salts are formed by the neutralization reaction between a strong base and a weak acid. Eg Sodium acetate

b)  $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$  . It should not be kept in open air as it absorbs moisture from air and hardens. It changes to gypsum i.e..  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

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