

# QB365 Question Bank Software Study Materials

## Acids, Bases and Salts Important 2,3 & 5 Marks Questions With Answers (Book Back and Creative)

9th Standard

Science

Total Marks : 75

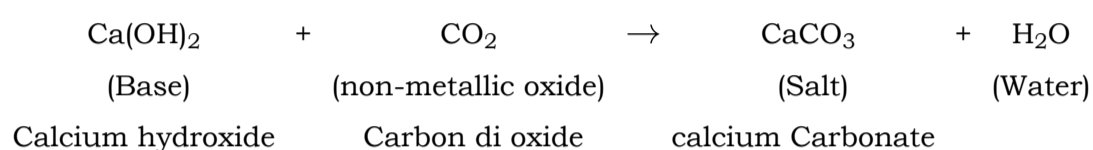
### 2 Marks

10 x 2 = 20

- 1) Non-metallic oxides are acidic in nature.

**Answer :** When non-metallic oxides react with bases, they can form a salt and water similar to the reaction of base with acids.

So non-metallic oxides are acidic in nature.



- 2) Complete the equation  $\text{HCl} + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{Cl}^-$

**Answer :**  $\text{HCl} + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+ + \text{Cl}^-$

- 3) Complete the equation  $\text{H}^+ + \text{H}_2\text{O} \rightarrow ?$

**Answer :**  $\text{H}^+ + \text{H}_2\text{O} \rightarrow \text{H}_3\text{O}^+$

- 4) Complete the equation  $\text{Mg} + ? \rightarrow ? + \text{H}_2$

**Answer :**  $\text{Mg} + \text{H}_2\text{SO}_4 \rightarrow \text{MgSO}_4 + \text{H}_2 \uparrow$

- 5) Complete the equation  $\text{ZnO} + 2\text{HCl} \rightarrow ? + ?$

**Answer :**  $\text{ZnO} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2\text{O} \uparrow$

- 6) Complete the equation  $\text{HCl} + ? \rightarrow \text{NaCl} + \text{H}_2\text{O}$

**Answer :**  $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

- 7) Interpret:  $\text{CH}_4$  and  $\text{NH}_3$  are not acids

**Answer :**  $\text{CH}_4$  and  $\text{NH}_3$  do not produce hydrogen ion ( $\text{H}^+$ ) in its aqueous solution

- 8) Interpret:  $\text{Al(OH)}_3$  &  $\text{Zn(OH)}_2$  are not alkalis.

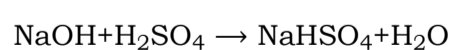
**Answer :**  $\text{Al(OH)}_3$  &  $\text{Zn(OH)}_2$  are water insoluble bases. So they are not in solution

- 9) Interpret:  $\text{NaOH}$  &  $\text{KOH}$  are strong bases

**Answer :** These are bases which ionise completely in aqueous solution

- 10) Interpret:  $\text{NaHSO}_4$  is an acid salt

**Answer :** It is formed by the partial replacement of hydrogen ion of sulphuric acid ( $\text{H}_2\text{SO}_4$ ) by a metal present in sodium hydroxide ( $\text{NaOH}$ )



### 3 Marks

10 x 3 = 30

- 11) Write any four uses of acids.

**Answer : Uses of acids:**

(i) Hydrochloric acid is used as a cleansing agent in toilets.

(ii) Citric acid is used in the preparation of effervescent salts and as a food preservative.

(iii) Nitric acid is used in the manufacture of fertilizers, dyes, paints and drugs.

(iv) Carbonic acid is used in aerated drinks.

12) Give the significance of pH of soil in agriculture.

**Answer :** In agriculture, the pH of soil is very important. Citrus fruits require slightly alkaline soil, while rice requires acidic soil and sugarcane requires neutral soil.

13) What are the various uses of Aquaregia.

**Answer :** 1. It is used chiefly to dissolve metals such as gold and platinum.  
2. It is used for cleaning and refining gold.

14) What are the uses of Plaster of Paris?

**Answer :** Uses of Plaster of Paris:

- (i) It is used for plastering bones.
- (ii) It is used for making casts for statues.

15) Two acids 'A' and 'B' are given. Acid A gives one hydrogen ion per molecule of the acid in solution. Acid B gives two hydrogen ions per molecule of the acid in solution.

- (i) Find out the acid A and acid B.
- (ii) Which acid is called the King of Chemicals?

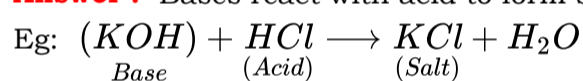
**Answer :** (i) Acid A - HCl -Hydrochloric acid. Acid B - H<sub>2</sub>SO<sub>4</sub> - Sulphuric acid.  
(ii) Sulphuric acid - H<sub>2</sub>SO<sub>4</sub>

16) Define aquaregia.

**Answer :** The Aquaregia is a mixture of hydrochloric acid and nitric acid prepared optimally in a molar ratio of 3:1. It is a yellow-orange fuming liquid.

17) What is neutralization reaction? Give an example.

**Answer :** Bases react with acid to form salt and water. This reaction is called as Neutralisation reaction.



18) Classify the various types of Acids based on their sources.

**Answer :** The acids are classified based on their sources are organic and inorganic acids. Organic acids - acids present in plants and animals. Inorganic acids - acids prepared from rock and minerals.

19) What are strong acids? Give example.

**Answer :** These are acids that ionise completely in water. Example: HCl.

20) Define - water crystallisation.

**Answer :** Many salts are found as crystals with water molecules. These water molecules are known as water of crystallisation.

**5 Marks**

5 x 5 = 25

21) Write any five uses of salts.

**Answer : Common Salt (NaCl) :**

It is used in our daily food and used as a preservative.

**Washing Soda (Sodium Carbonate -  $\text{Na}_2\text{CO}_3$ ) :**

- (i) It is used in softening hard water.
- (ii) It is used in glass, soap and paper industries.

**Baking Soda (Sodium bicarbonate -  $\text{NaHCO}_3$ ) :**

- (i) It is used in making of baking powder which is a mixture of baking soda and tartaric acid.
- (ii) It is used in soda-acid fire extinguishers.
- (iii) Baking powder is used to make cakes and bread, soft and spongy.
- (iv) It neutralizes excess acid in the stomach and provides relief.

**Bleaching powder (Calcium Oxychloride -  $\text{CaOCl}_2$ ) :**

- (i) It is used as disinfectant.
- (ii) It is used in textile industry for bleaching cotton and linen.

**Plaster of Paris (Calcium Sulphate Hemihydrate -  $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ ) :**

- (i) It is used for plastering bones
- (ii) It is used for making casts for statues.

- 22) Sulphuric acid is called King of Chemicals. Why is it called so?

**Answer :** Sulphuric acid is called King of Chemicals because it is used in the preparation of many other compounds.

- 23) Give the tests to identify Acids and Bases.

**Answer : a) Test with a litmus paper:**

An acid turns blue litmus paper into red. A base turns red litmus paper into blue.

**b) Test with an indicator Phenolphthalein:**

In acid medium, phenolphthalein is colourless. In basic medium, phenolphthalein is pink in colour.

**c) Test with an indicator Methyl orange:**

In acid medium, methyl orange is pink in colour. In basic medium, methyl orange is yellow in colour.

Indicator	Colour in acid	Colour in base
Litmus	Blue to Red	Red to Blue
Phenolphthalein	Colourless	Pink
Methyl orange	Pink	Yellow

- 24) Explain classification of acids based on their basicity.

**Answer : Monobasic Acid:**

Acid that contain only one replaceable hydrogen atom per molecule is called monobasic acid. It gives one hydrogen ion per molecule of the acid in solutions.

Example:  $\text{HCl}$ ,  $\text{HNO}_3$

**Dibasic Acid:**

An acid which gives two hydrogen ions per molecule of the acid in solution.

Example:  $\text{H}_2\text{SO}_4$ ,  $\text{H}_2\text{CO}_3$

**Tribasic Acid:**

An acid which gives three hydrogen ions per molecule of the acid in solution.

Example:  $\text{H}_3\text{PO}_4$ .

- 25) List the properties of salts.

**Answer :** (i) Salts are mostly solids which melt as well as boil at high temperature ..

(ii) Most of the salts are soluble in water. For example: chloride salts of potassium and sodium are soluble in water. But silver chloride is insoluble in water.

(iii) They are odourless, mostly white, cubic crystals or crystalline powder with salty taste.

(iv) Salt is hygroscopic in nature.