

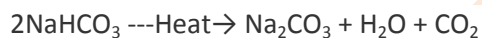
Class: X
Subject: Chemistry
Topic: Acids, bases and salts
No. of Questions: 20

Q1. Why should curd and sour substances not be kept in brass and copper vessels?

Ans. Curd and other sour substances contain acids. Therefore, when they are kept in brass and copper vessels, the metal reacts with the acid to liberate hydrogen gas and harmful products, thereby spoiling the food.

Q2. How would you distinguish between baking powder and washing soda by heating?

Ans. Sodium hydrogencarbonate on heating gives CO_2 gas which will turn lime water milky whereas no such gas is obtained from sodium carbonate.



Q3. An element common to all acid is

- A. Chlorine
- B. Nitrogen
- C. Oxygen
- D. Hydrogen

Ans. (D) Hydrogen

Q4. Why does dry HCl gas not change the colour of the dry litmus paper?

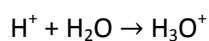
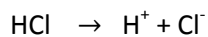
Ans. Dry HCl gas does not change the colour of dry litmus paper because it has no hydrogen ions (H^+) in it.

Q5. Name the products formed from the chloro-alkali process.

Ans. These products are NaOH (sodium hydroxide), Cl₂ gas and H₂ gas.

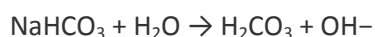
Q6. Why do HCl, HNO₃, etc, show acidic characters in aqueous solutions while solutions of compounds like alcohol and glucose do not show acidic character?

Ans. The dissociation of HCl or HNO₃ to form hydrogen ions always occurs in the presence of water. Hydrogen ions (H⁺) combine with H₂O to form hydronium ions (H₃O⁺).



Q7. Why aqueous solution of sodium carbonate is basic in nature?

Ans. Sodium bicarbonate is an amphoteric compound. Aqueous solutions are mildly alkaline due to the formation of carbonic acid and hydroxide ion:



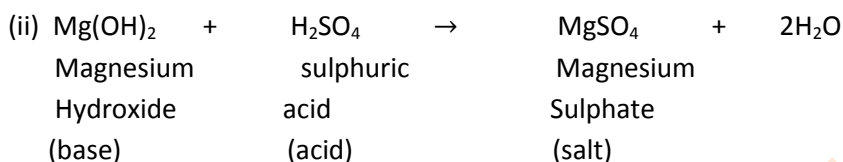
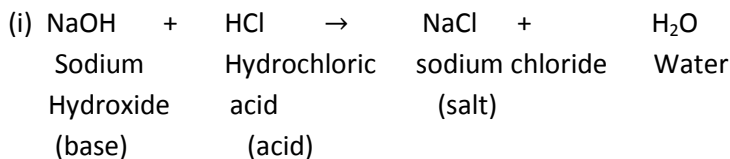
Q8. On passing excess of CO₂ gas in an aqueous solution of calcium carbonate. Milkiness of the solution

- A. persists
- B. fades
- C. deepens
- D. disappears

Ans. (B) fades

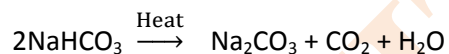
Q9. What is a neutralisation reaction ? Give two examples.

Ans: All bases react with acids to form salt and water. This process is known as neutralisation eg.



Q10. What happens when a solution of sodium hydrogen carbonate is heated ? Write equation of the reaction involved.

Ans. When a solution of sodium hydrogen carbonate is heated, it decomposes to give sodium carbonate with the evolution of carbon dioxide gas.



Q11. Why does an aqueous solution of an acid conduct electricity?

Ans. Acids dissociate in aqueous solution to form ions. These ions are responsible for conduction of electricity.

Q12. Write the composition of baking powder. What will happen if tartaric acid is not added to it?

Ans. Baking powder is a mixture of sodium bicarbonate and tartaric acid. This acid neutralizes sodium carbonate formed on decomposition of baking soda. If tartaric acid is not present in baking powder, the food materials such as cake will taste bitter due to the presence of sodium carbonate.

Q13. What is deliquescent and hygroscopic substance?

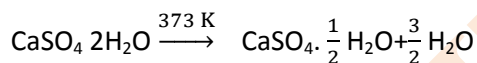
Ans. Deliquescent substances and hygroscopic substances both are the water attracting or absorbing substances. Such substance becomes moist or wet when placed in damp or moist place by absorbing water.

Hygroscopic substances become wet while deliquescent substance dissolves after absorbing moisture. This is the major difference between these two closely related terms.

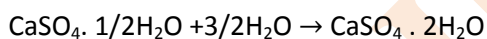
For e.g. CaCl_2 is deliquescent while NaCl is hygroscopic.

Q14. How is plaster of paris chemically different from gypsum?

Ans. Plaster of Paris is $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$ Gypsum is $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



GYPSUM Plaster of paris



Plaster of paris Gypsum

It is used for plastering fractured bones.

Q15. What happens to most of the molecules of a strong acid when the acid is mixed with water?

Ans. When a strong acid is mixed with water, most of the molecules of strong acid donates hydrogen ions (H^+) to water and water molecules change to hydronium ion (H_3O^+). Hence most of the molecules of a strong acid get converted to ions when mixed with water.

Q16. What are hydrated salts? Give an example.

Ans. Salts containing a fixed number of water molecules in their crystal structure are called hydrated salts.

A molecule of sodium carbonate ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$) contains ten molecules of water. This is known as hydrated salt of sodium carbonate.

Q17. Tartaric acid is the constituent of

- A. Bleaching powder
- B. Baking powder
- C. Washing powder
- D. Plaster of paris

Ans. Baking powder

Q18. Do basic solutions also have H^+ (aq) ions. If yes, then why are these basic?

Ans. Yes, basic solution also has H^+ (aq) ions. However, their concentration is less as compared to the concentration of OH^- ions that makes the solution basic.

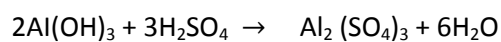
Q19. Name the organic acid present in tomato

- A. Tartaric Acid
- B. Malic Acid
- C. Lactic Acid
- D. Oxalic Acid

Ans. (D) Oxalic Acid

Q20. Write the balanced equation in molecular form illustrating the complete neutralization of $\text{Al}(\text{OH})_3$ with H_2SO_4 .

Ans. Complete neutralization requires one H^+ for each OH^- . Since $\text{Al}(\text{OH})_3$ has three available OH^- ions and H_2SO_4 can only provide two H^+ ions, the reaction requires two moles of $\text{Al}(\text{OH})_3$ for three moles of H_2SO_4 .



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