

Hydrogen Chloride Important Questions

Question 1. From the list given below choose the compounds whose aqueous solution give white precipitate with dilute HCl :

Ammonium chloride, ammonium nitrate, chlorine, dilute hydrochloric acid, iron, lead nitrate, manganese (IV) oxide, silver nitrate, sodium nitrate, sodium nitrite, sulphur.

Question 2. State what you observe when silver nitrate solution is added to dilute hydrochloric acid?

Question 3. What must be added to sodium chloride to obtain hydrogen chloride? Write the equation for the reaction.

Question 4. What would you see when hydrogen chloride mixes with ammonia?

Question 5. Hydrogen chloride dissolves in water forming an acidic solution.

- Name the experiment which demonstrates that hydrogen chloride is very soluble in water.
- Give three distinct tests [apart from using an indicator] you would carry out with this solution to illustrate the typical properties of an acid.

Question 6. Write the equation for the reaction of hydrochloric acid with each of the following:

- Lead nitrate solution
- Manganese
- Oxide.

Question 7. Write the equation for:

- The preparation of hydrogen chloride from sodium chloride and sulphuric acid. State whether the sulphuric acid should be concentrated or dilute.
- The reaction of hydrogen chloride with ammonia.

Question 8. Name one lead compound that can be used to oxidize hydrogen chloride to chlorine ?

Question 9. From the following gases - NH_3 , Cl_2 , HCl , SO_2 , select the gas that matches the description given below and answer the questions that follows: When gas C is mixed with gas B, dense white fumes are seen and there is no other product [gas B turns moist red litmus paper blue].

- What is the name of gas C.
- What is the name of the product of the reaction gas B and gas C.

Question 10. What happens [state your observations] when dil. HCl is added to lead nitrate solution? .

Question 11. Manganese (IV) oxide, lead (IV) oxide and red lead [Pb_3O_4] react with conc. HCl liberating chlorine.

- What is the common property being shown by these metal oxides.
- Write the equation for the reaction of conc. HCl with Pb_3O_4 .

Question 12. Write the observations and balanced equations for the following reaction :- Excess of ammonium hydroxide is added to a substance obtained by adding hydrochloric acid in silver nitrate solution?

Question 13. From the gases - ammonia, hydrogen chloride, hydrogen sulphide, sulphur dioxide – Select the following :- The gas which gives a white ppt. when reacted with AgNO₃ soln. acidified with dilute nitric acid ?

Question 14. Write a balanced equation for the reaction of red lead (trilead tetraoxide) warmed with conc. HCl ?

Question 15. A solution of hydrogen chloride in water is prepared. The following substances are added to separate portions of the solution :-
Substances Added Gas evolved Odour
Calcium carbonate
Magnesium ribbon
Manganese oxide with heating
Sodium sulphide
Complete the table by writing the gas evolved in each case and its odour ?

Question 16. Write balanced equations for the following reactions :

- i. Copper oxide and dilute Hydrochloric acid.
- ii. Manganese
- iii. Oxide and concentrated Hydrochloric acid.

Question 17. i. Name the experiment illustrated asid. Fig

ii. Which property of hydrogen chloride is demonstrated by this experiment. iii. State the colour of the water that has entered the round-bottomed flask.

Question 18. Select the correct compound from the list – Ammonia, Copper oxide, Copper sulphate, Hydrogen chloride, Hydrogen sulphide, Lead bromide – which matches with the description given below : This compound can be oxidized to chlorine ?

Question 19. Write balanced chemical equation for the reaction of zinc and dilute hydrochloric acid ?

Question 20. State what is observed when hydrochloric acid is added to silver nitrate solution.

Question 21. Write a balanced chemical equation for the reaction of calcium bicarbonate & dil. Hydrochloric acid ?

Question 22. Write balanced equation for the following reaction : Sodium chloride from sodium carbonate solution and dilute hydrochloric acid

Question 23. You enter a laboratory after a Class has completed the Fountain Experiment. How will you be able to tell whether the gas used in the experiment was hydrogen chloride or ammonia ?

Question 24. Write balanced equations for the reaction of dilute hydrochloric acid with each of the following:

- i. Iron
- ii. Sodium hydrogen chloride
- iii. Iron iv. sulphide
- iv. Sodium sulphite
- v. Sodium thiosulphate solution.

Question 25. When silver nitrate solution is added to a solution of a salt, a white precipitate, insoluble in dilute nitric acid, is formed, identify the anion present in the salt.

