

Chemistry Practical Class 10 Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with Zinc metal Viva Questions with Answers

Q1. What is an acid?

Answer: An acid is a chemical compound that is sour in taste and has a pH value of less than 7. It turns blue litmus paper red and can donate a proton (hydrogen ions) to another chemical compound.

Q2. What is a base?

Answer: A base is a chemical compound that is bitter in taste and has a pH value of more than 7. It turns red litmus paper blue and can accept a proton (hydrogen ions) from another chemical compound.

Q3. Give examples of a few strong acids?

Answer: Sulfuric acid, nitric acid and hydrochloric acid are examples of a few strong acids.

Q4. Give examples of a few strong bases?

Answer: Lithium hydroxide, sodium hydroxide, and potassium hydroxide are examples of a few strong bases.

Q5. What is a strong acid?

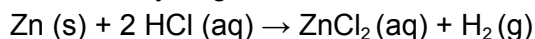
Answer: The acid that ionises completely in an aqueous solution is known as a strong acid.

Q6. What is a strong base?

Answer: The base that ionises completely in an aqueous solution is known as a strong base.

Q7. Name the gas released when the zinc metal reacts with the hydrochloric acid solution?

Answer: Hydrogen is liberated when the zinc metal reacts with the hydrochloric acid solution.



Q8. Hydrogen gas is neutral to the litmus paper. Explain why?

Answer: Hydrogen gas is neither acidic nor basic. Thus, it does not alter the blue or red litmus paper.

Q9. Name a metal (other than zinc) that reacts with dilute hydrochloric acid solution and gives a colourless gas that burns with a pop sound.

Answer: Magnesium reacts with a dilute hydrochloric acid solution to give a colourless gas that burns with a pop sound.

Q10. Why does metal displace hydrogen from dilute acids?

Answer: Metal displaces hydrogen from dilute acids because metal is more reactive than hydrogen. Thus, it displaces hydrogen ions from dilute acids easily. It also supplies electrons to hydrogen ions which then convert into hydrogen gas.

Q11. Name a metal that reacts with a base and acid to liberate hydrogen gas?

Answer: Zinc reacts with a base and acid to liberate hydrogen gas.

Q12. What happens to the colour of zinc granules when it reacts with a dilute hydrochloric acid solution?

Answer: Zinc granules turn black after reacting with the hydrochloric acid solution.

Q13. Name a metal other than zinc that reacts with sodium hydroxide solution to produce hydrogen gas?

Answer: Aluminium reacts with sodium hydroxide solution to produce hydrogen gas.

Q14. Do all metals displace hydrogen gas from dilute acids?

Answer: No, metals above hydrogen in the reactivity series can displace hydrogen from dilute acids.

Q15. Hydrogen gas burns with an explosion. Explain Why?

Answer: Hydrogen burns with an explosion because it has a high calorific value and low ignition temperature.

Q16. Write the reaction between the zinc metal and dilute sulphuric acid.

Answer: $\text{Zn (s)} + \text{H}_2\text{SO}_4\text{(aq)} \rightarrow \text{ZnSO}_4\text{(aq)} + \text{H}_2\text{(g)}$

Q17. What will happen to a lighted candle if it is brought close to the mouth of a gas jar containing hydrogen gas?

Answer: The lighted candle will extinguish with a pop sound if it is brought close to the mouth of a gas jar containing hydrogen gas. Moreover, the gas will also burn with a pale blue flame.

Q18. Why do we use zinc granules for the test in the laboratory?

Answer: We use zinc granules for the test in the laboratory because zinc granules expand the surface area. Hence, the reaction occurs fast.