



## Chapter – 1 Hydrogen Chloride & Hydrochloric Acid

1. Write the balanced equation between Sodium carbonate solution and dilute hydrochloric acid.
2. Write equation for the action of chlorine with slaked lime.
3. Write balanced equation for the Red lead (trilead tetroxide) is warmed with concentrated hydrochloric acid.
4. Write the balanced equation for the Dilute hydrochloric Acid and sodium sulphite.
5. Write the chemical equation for the laboratory preparation of HCl gas when the reactants are:
  - (A) Below  $200^{\circ}\text{C}$
  - (B) Above  $200^{\circ}\text{C}$
6. Write a fully balanced equation when magnesium metal is treated with dilute hydrochloric acid.
7. Write the equations for dilute hydrochloric acid and sodium sulphate.
8. Write the balanced equation for dilute hydrochloric acid and lead nitrate solution.
9. Write balanced equation for the reaction of dilute hydrochloric acid with each of the following:
  - (a) Iron
  - (b) Sodium hydrogen carbonate
  - (c) Iron (ii) sulphate
  - (d) Sodium thiosulphate solution.
10. Write the balanced equation for the Copper oxide and dilute hydrochloric acid.
11. Write the balanced equation for the manganese (IV) oxide and concentrated hydrochloric acid.

12. Write the equation for the reaction of concentrated hydrochloric acid with  $\text{Pb}_3\text{O}_4$ .
13. Write the equation for the:
- (a) Preparation of hydrogen chloride from sodium chloride and sulphuric.
  - (b) Reaction of hydrogen chloride with ammonia.
14. Write the equation for the reaction when sodium chloride to obtain hydrogen chloride.
15. Write the equation for the reaction of hydrochloric acid with each of the following:
- (a) Bleaching powder
  - (b) Lead nitrate solution.

## Chapter-2 AMMONIA

1. Write a fully balanced equation for Magnesium nitride treated with warm water.
2. Write the equation for Aluminium nitride and water.
3. Write balanced equation for reaction of Ammonium sulphate and dilute sulphuric acid.
4. Write the balanced equation for the action chlorine with excess of ammonia.
5. Write the equation for the preparation of ammonia from ammonium chloride and calcium hydroxide.
6. Write the balanced equation for the laboratory preparation of pungent smelling gas. The gas is alkaline in nature.
7. Ammonia can act as a reducing agent write a relevant equation for such a reaction.
8. Write a balanced equation for a reaction in which ammonia is oxidized by:
  - (a) A metal oxide
  - (b) A gas which is not oxygen.
9. Write an equation to illustrate the reducing nature of ammonia.

10. Write the equation for the reaction which results in a mixture of ammonium chloride and slaked lime is heated.
11. Write the equation for the reaction in the Haber process that forms ammonia.
12. What are the products formed when ammonia is oxidized with copper oxide.

### **Chapter-3 NITRIC ACID**

1. Write a fully balanced equation for the Lead nitrate is heated in a dry test tube.
2. Write the equation for the Dilute nitric and copper.
3. What is the equation for the following reaction of Sulphur and hot concentrated nitric acid.
4. Write a balanced equation for the following reaction:  
Concentrated nitric acid is added to copper turnings kept in a beaker.
5. Write an equation to show how nitric acid undergoes decomposition.
6. Write the equation for the reaction in which copper is oxidized by concentrated nitric acid.
7. Write the equation for the laboratory preparation of nitric acid from potassium nitrate and concentrated sulphuric acid.
8. Write equations for the following reactions:
  - (a) Copper and concentrated nitric acid.
  - (b) Copper oxide and dilute nitric acid.

### **Chapter-4 SULPHURIC ACID**

1. Write balanced equation for the following reaction:  
Copper sulphate from copper and concentrated sulphuric acid.
2. Write the equation for the laboratory preparation of:  
Lead sulphate using dilute sulphuric acid.
3. Write a balanced equation for the reaction between zinc and dilute sulphuric acid.

4. Write the equations for the following reactions:
  - (a) Dilute sulphuric acid and barium chloride
  - (b) Dilute sulphuric acid and sodium sulphide.
5. Write balanced equations for the following reactions:
  - (a) Potassium hydrogen carbonate and dilute sulphuric acid
  - (b) Sodium nitrate and concentrated sulphuric acid.

### Chapter-5 ORGANIC CHEMISTRY

1. Write a fully balanced equation for the following case:  
Acetic acid is warmed with ethanol in the presence of concentrated sulphuric acid.
2. Write balanced equation for the following reaction:  
Ethane is burnt in air.
3. Write the balanced equation for the following reaction:  
Ethane and hydrogen
4. Write balanced chemical equation for the following:
  - (a) Monochloro ethane is hydrolysed with aqueous KOH.
  - (b) A mixture of sodalime and sodium acetate is heated.
  - (c) Ethanol under high pressure and low temperature is treated with acidified potassium dichromate.
  - (d) Water is added to calcium carbide.
  - (e) Ethanol reacts with sodium at room temperature.
5. Write the equations for the following reactions:
  - (a) Ethane and water (steam)
  - (b) Bromoethane and an aqueous solution of sodium hydroxide.
  - (c) Calcium carbide and water
6. Write the equation for the complete combustion of ethane.
7. Write balanced chemical equations for the following reactions:
  - (a) Ethane and oxygen in the presence of molybdenum oxide.

- (b) Preparation of methane from anhydrous sodium ethanoate (sodium acetate).
- (c) Heating ethanol of 443 K (170 °C) in the presence of concentrated sulphuric acid.

8. Write the equations for the following laboratory preparations:

- (a) Ethane from sodium propionate
- (b) Ethane from iodoethane
- (c) Ethyne from calcium carbide
- (d) Methanol from iodomethane

9. Write the equation for the preparation of ethylene from ethyl alcohol.

10. Write a balanced equation for the complete combustion of ethane.

11. Write balanced equations for the preparation of the following:

- (a) Ethane from ethanol
- (b) Ethanoic acid from ethane

12. Write down the equation for the preparation of ethyne from calcium carbide.

13. Write the equation for the laboratory preparation of ethyne (acetylene) from calcium carbide.