

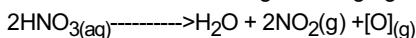
## Chemistry - 12th Class Chemistry Chapter 4 Short Questions Preparation

Q1. Why Dinitrogen Oxide is called Laughing gas?

**Ans 1:** Its mixture with a little oxygen, if inhaled for a sufficiently long time, produces hysterical laughter, hence it is also known as laughing gas.

Q2. How does  $\text{HNO}_3$  act as an oxidizing agent?

**Ans 1:** It acts as a strong oxidizing agent due to the ease with which it is decomposed.



Q3. Give the advantage of contact process for the manufacture of sulphuric acid.

**Ans 1:** i) Contact process gives good yield of sulphuric acid.  
ii) Contact process produce sulphuric acid which is in its pure form.

Q4. Why  $\text{SO}_3$  is dissolved in  $\text{H}_2\text{SO}_4$  and not in water?

**Ans 1:**  $\text{SO}_3$  is not directly dissolved in water, since absorption is incomplete and mist of  $\text{SO}_3$  and  $\text{H}_2\text{SO}_4$  fills the factory, which causes great inconvenience to the workers. Therefore,  $\text{SO}_3$  is absorbed in concentrated  $\text{H}_2\text{SO}_4$  and Oleum ( $\text{H}_2\text{S}_2\text{O}_7$ ) formed can be converted to sulphuric acid of any strength by mixing adequate quantities of water.

Q5. Justify that  $\text{H}_2\text{SO}_4$  is a king of chemicals?

**Ans 1:**  $\text{H}_2\text{SO}_4$  has many applications in daily life, laboratories, industries etc. What's common to petrol, fertilizers, cars and soap? They, like a lot of other things require sulfuric acid to be made. That's why sulfuric acid is called the king of chemicals.

Q6. How does nitrogen differ from other elements of its group? Give four points.

**Ans 1:** i) Nitrogen is diatomic gas and occurs in free state while other members are tetra atomic solids and occur in combined state.

**Ans 2:** ii) Nitrogen does not show allotropy while other do except bismuth.

**Ans 3:** iii) Nitrogen shows +1, +2, +3, +4, +5, -1, -2, -3 oxidation states, while other elements don't show the variety of oxidation states.

**Ans 4:** iv) Nitrogen is a poor conductor of heat and electricity and gives acidic oxides except phosphorus while other members are not.

Q7. Describe Ring test for confirmation of presence of nitrate ions in solution?

**Ans 1:** To the aqueous solution of  $\text{NO}_3^-$  ions add  $\text{FeSO}_4$  solution. Shake it well and add concentrated  $\text{H}_2\text{SO}_4$  along the side of test tube. It forms a ring of brown coloured addition compound at the junction of two liquids due to the addition compound formed by the action of  $\text{NO}$  produced with  $\text{FeSO}_4$



Q8. Write any four important uses of  $\text{H}_2\text{SO}_4$ ?

**Ans 1:** i) It is used in manufacturing of fertilizers like ammonium sulphate and calcium superphosphate.

**Ans 2:** ii) It is used in refining of petroleum to remove nitrogen and sulphur compounds.

**Ans 3:** iii) It is used in manufacturing of  $\text{HCl}$ ,  $\text{H}_3\text{PO}_4$ ,  $\text{HNO}_3$  and sulphates.

**Ans 4:** iv) It is used in electrical batteries and storage cells.

Q9. Give name and formulas of Oxyacids of Phosphorous.

**Ans 1: Name Formula**

Phosphoric acid  $\text{H}_3\text{PO}_3$

Orthophosphoric acid  $\text{H}_3\text{PO}_4$

Pyrophosphoric acid  $\text{H}_4\text{P}_2\text{O}_7$

Metaphosphoric acid  $\text{HPO}_3$

Q10. What is aqua-regia?

**Ans 1:** When one volume of concentrated  $\text{HNO}_3$  is mixed with three volume of concentrated  $\text{HCl}$ , aqua regia is formed. It is employed to dissolve gold and platinum.

