# 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.

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Q2. How does $HNO_3$act as an oxidizing agent?

**Ans 1:** It acts as a strong oxidizing agent due to the ease with which it is decomposed.
$2HNO_{3(aq)}$---------->$H_2O + 2NO_2(g) + [O]_{(g)}$

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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.

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Q4. Why $SO_3$is dissolved in $H_2SO_4$and not in water?

**Ans 1:** $SO_3$is not directly dissolved in water,since absorption is incomplete and mist of $SO_3$and $H_2SO_4$fills the factory,which causes great causes great inconvenience the workers.Therefor,$SO_3$is absorbed in concentrated $H_2SO_4$and Oleum($H_2S_2O_7$) formed can be converted to sulphuric acid of any strength by mixing adequate quantities of water.

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Q5. Justify that $H_2SO_4$is a king of chemicals?

**Ans 1:** $H_2SO_4$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.

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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 tetra atomic solids and occur in combines 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 poor conductor of heat electricity and give acidic oxides except phosphorus while other member are not.

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

**Ans 1:** To the aqueous solution of $NO_3$ions add $FeSO_4$solution.Shake it well and add concentrated $H_2SO_4$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 NO produced wit $FeSO_4$

$FeSO_{4(aq)}+ NO_{(g)}$---------->$FeSO_4.NO_{(aq)}$

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Q8. Write any four important uses of $H_2SO_4$?

**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 HCl,$H_3PO_4$,$HNO_3$and sulphates.

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

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Q9. Give name and formulas of Oxyacids of Phosphorous.

**Ans 1:** **Name Formula**

Phosphoric acid $H_3PO_3$

Orthophosphoric acid $H_3PO_4$

Pyrophosphoric acid $H_4P_2O_7$

Metaphosphoric acid $HPO_3$

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Q10. What is aqua-regia?

**Ans 1:** When one volume of concentrated $HNO_3$is mixed with three volume of concentrated HCl,aqua regia is formed.It is employed to dissolve gold and platinum.

$HNO_{3(conc)}+ 3HCl_{(conc)}$---------$NOCl_{(aq)}+ Cl_{2(g)} + 2H_2O_{(l)}$

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