Chemistry - 12th Class Chemistry Chapter 4 Short Questions Preparation

Q1. Give definition of allotropy. Write allotropes of phosphorus.

Ans 1: **Definition**:When an elements exist in different crystalline forms.These crystalline forms are called allotropic forms and this phenomenon is called allotropy.

Ans 2: **Allotropic forms of phosphorous**:Phosphorus can exist in at least six different solid allotropic forms.But here mentioned only three.

Ans 3: i) Write phosphorus (P_4)
ii) Red phosphorus (macromolecule of P_4)
iii) Black phosphorus (high temperature heating of red P)

Q2. 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.

Q3. 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

Q4. 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.
$HNO_{3(conc)} + 3HCl_{(conc)}$---------$NOCl_{(aq)} + Cl_{2(g)} + 2H_2O_{(l)}$

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

Ans 1: H_2SO_4has 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. Write any four uses of nitric acid?

Ans 1: i) It is used as laboratory reagent.

Ans 2: ii) It is used in manufacturing of explosives.

Ans 3: iii) It is used in manufacturing of nitrogen fertilizers.

Ans 4: iv) It is used to make varnishes and organic dyes.

Q7. How $H_3PO_4$is prepared on large scale?

Ans 1: It is prepared by dissolving phosphorus trioxide in cold water.
$P_2O_3 + 3H_2O \text{-------} > H_3PO_3$

Ans 2: It is also obtained by the hdrolysis of phosphorus trichloride.
$PCl_3 + 3H_2O \text{---------} > H_3PO_3 + 3HCl$

Q8. 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_4fills 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.

Q9. Describe Ring test for confirmation of presence of nitrate ions in solution?

Ans 1: To the aqueous solution of NO_3ions add $FeSO_4$solution.Shake it well and add concentrated H_2SO_4along 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 $FeSO_4$
$FeSO_{4(aq)} + NO_{(g)} \text{---------} > FeSO_4.NO_{(aq)}$

Q10. Write names and formulas of oxyacids of nitrogen.

Ans 1: **Name Formula**
1.Nitrous Acid HNO_2
2. Nitric Acid HNO_3
