

Chemistry Worksheet

Class XII The p-Block Elements

Q1. Answer the following:

- Why are pentahalides more covalent than trihalides?
- Write the relation of thermal decomposition of sodium azide.
- Why does NH_3 act as a Lewis base?
- What is the covalence of nitrogen in N_2O_5 ?
- Why does NO_2 dimerize?
- What is the basicity of H_3PO_2 and why?
- PH_3 has lower boiling point than NH_3 why?
- Why is H_2O a liquid and H_2S a gas?
- List the important source of sulfur.
- Why does O_3 act as a powerful oxidizing agent?

Q2. Answer the following:

- What happens when-
 - H_3PO_3 is heated?
 - PCl_3 is heated?
- Explain the following:
 - NO_2 readily forms a dimer.
 - Nitrogen is much less reactive than phosphorus.
 - All the bonds in PCl_5 molecule are not equivalent.
- Give reasons for the following:
 - Why does $\text{R}_3\text{P}=\text{O}$ exist but $\text{R}_3\text{N}=\text{O}$ does not? (where R is an alkyl group)
 - At room temperature, N_2 is much less reactive.
- Complete the following chemical reaction equations:
 - $\text{I}_2 + (\text{conc.}) \text{HNO}_3 \rightarrow$
 - $\text{HgCl}_2 + \text{PH}_3 \rightarrow$
- Draw the structures of white phosphorus and red phosphorus. Which one of these two types of phosphorus is more reactive and why?

Q3. Bond angle in PH_4^+ is higher than that in PH_3 . Why?

Q4. What happened when white phosphorus is heated with conc NaOH solution in an inert atmosphere of CO_2 ?

Q5. Are all the five bonds in PCl_5 molecule covalent? Justify your answer.