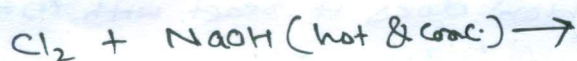
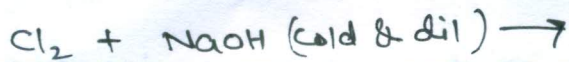
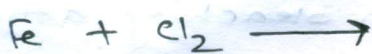
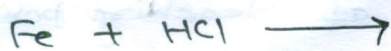
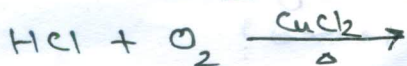
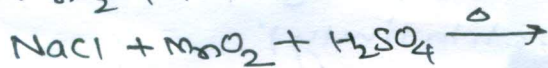
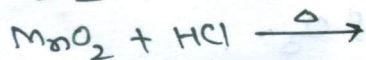
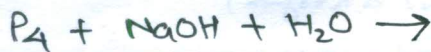
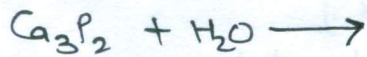
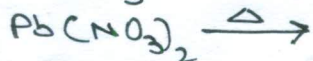
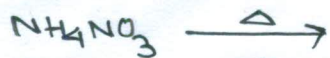
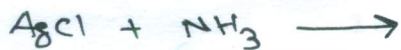
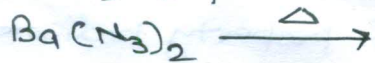
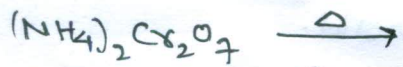
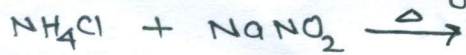


The p-Block Elements

- Write the general valence shell configuration of p-block elements.
- Write structure of the following:  
 $\text{HNO}_3$ ,  $\text{H}_3\text{PO}_2$ ,  $\text{H}_3\text{PO}_3$ ,  $\text{H}_3\text{PO}_4$ ,  $\text{H}_4\text{P}_2\text{O}_7$ ,  $\text{P}_4\text{O}_6$ ,  $\text{P}_4\text{O}_{10}$ ,  $\text{H}_2\text{SO}_3$ ,  $\text{H}_2\text{S}_2\text{O}_3$ ,  
 $\text{H}_2\text{SO}_4$ ,  $\text{H}_2\text{SO}_5$ ,  $\text{H}_2\text{S}_2\text{O}_8$ ,  $\text{H}_2\text{S}_2\text{O}_7$ ,  $\text{HClO}$ ,  $\text{HClO}_2$ ,  $\text{HClO}_3$ ,  $\text{HClO}_4$ ,  $\text{ClF}$ ,  
 $\text{ClF}_3$ ,  $\text{IF}_5$ ,  $\text{IF}_7$ ,  $\text{XeF}_2$ ,  $\text{XeF}_4$ ,  $\text{XeF}_6$ ,  $\text{XeOF}_2$ ,  $\text{XeOF}_4$ ,  $\text{XeO}_3$
- Complete the following reactions:



- Give suitable reason:-

- \* Nitrogen is diatomic but phosphorous is tetraatomic.
- \*  $\text{NH}_3$  has higher boiling point than  $\text{PH}_3$ .
- \*  $\text{N}_2$  is less reactive at room temp.
- \*  $\text{H}_3\text{PO}_3$  is dibasic but  $\text{H}_3\text{PO}_4$  is tribasic.
- \* Bond angle of  $\text{PH}_4^+$  is higher than that of  $\text{PH}_3$



- \*  $PCl_3$  fumes in moisture.
- \* All five bonds in  $PCl_5$  are not equivalent.
- \*  $K_{a2} \ll K_{a1}$ , for  $H_2SO_4$  in water.
- \* Bond dissociation enthalpy of  $F_2$  is lower than that of  $Cl_2$ .
- \*  $F_2$  is stronger oxidising agent than  $Cl_2$ .
- \* Halogens are coloured.
- \* Colour of halogen darkens from  $F_2$  to  $I_2$ .
- \* Nitrogen does not form pentahalide.
- \* Oxygen is a gas but Sulphur is a solid.

5. Arrange the following in the order of property indicated for each case:

- \*  $F_2, Cl_2, Br_2, I_2$  (Bond dissociation energy) increasing order of
- \*  $HF, HCl, HBr, HI$  (Acidic strength)
- \*  $NH_3, PH_3, AsH_3, BiH_3$  (Basic strength)
- \*  $HF, HCl, HBr, HI$  (Reducing power)
- \*  $HClO, HClO_2, HClO_3, HClO_4$  (Acidic strength)
- \*  $HClO, HBrO, HIO$  (Acidic strength)

6. Describe the principle of manufacture of following  
(i)  $NH_3$  (ii)  $HNO_3$  (iii)  $H_2SO_4$ .

7. How does Conc.  $H_2SO_4$  react with (i)  $Cu$  (ii)  $Zn$  (iii)  $C$

8. How does Conc.  $HNO_3$  react with (i)  $Zn$  (ii)  $P_4$  (iii)  $I_2$

9. Give two examples of poisonous gases of  $Cl_2$  with method of preparation.

10. Give the method of preparation of  $O_3$ .

11. How is  $O_3$  estimated quantitatively?

12. How is the presence of  $SO_2$  detected?

13. Give the method of preparation of bleaching powder

14. What are differences between bleaching action of  $Cl_2$  and  $SO_2$ ?

15. What is aqua-regia? How does it react with (i)  $Au$  (ii)  $Pt$

16. Give the chemistry of Nessler's test of  $NH_3$ .

17. Give the chemistry of Ring test of  $NO_3^-$  ion.

18. What inspired, N. Bartlett for carrying out the reaction between  $Xe$  and  $PtF_6$

\*