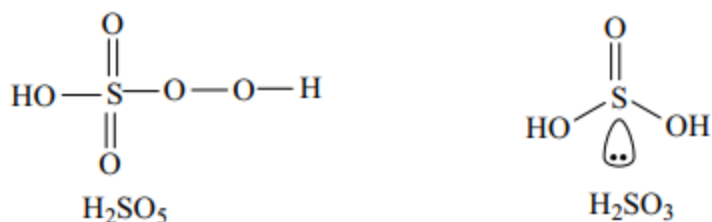
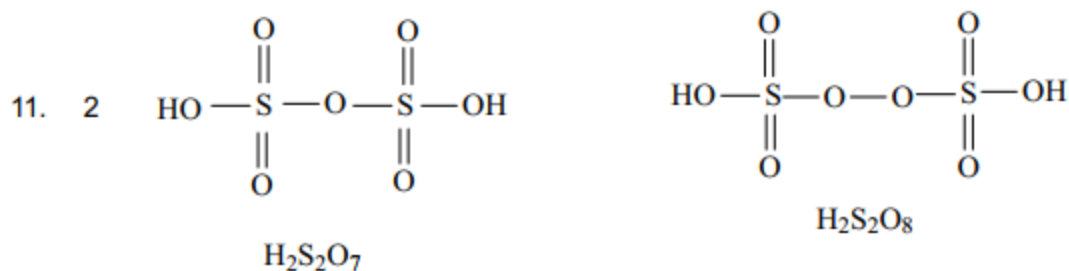


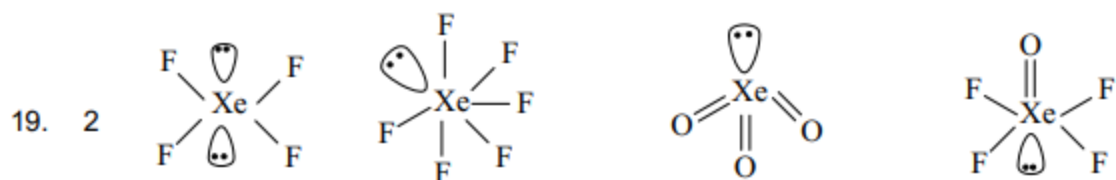
## CHAPTER - 15

### THE p-BLOCK ELEMENTS (Group 13-18)

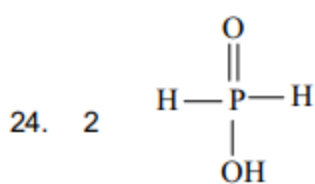
1. 4 Order of electronegativity :  $\text{Al} < \text{Ga} < \text{In} < \text{Tl} < \text{B}$
2. 4 Stability of +1 oxidation state increases down the group due to inert pair effect
3. 3 Ga has high boiling point and low melting point, thus used in high temperature thermometer
4. 4  $\text{PbI}_4$  does not exist as Pb is less stable in the +4 oxidation state and Pb-I bond is less stable
5. 2 Order of bond energy is  $\text{C-C} > \text{Si-Si} > \text{Ge-Ge} > \text{Sn-Sn}$
6. 4 Allotrope                      Hybridisation  
     Graphite                       $\text{sp}^2$   
     Fullerene                       $\text{sp}^2$   
     Diamond                       $\text{sp}^3$
7. 2 N-N single bond is less stable than P-P single bond. Thus catenation tendency is weaker in nitrogen
8. 2  $\text{P}_2\text{O}_3$  - acidic  
      $\text{As}_2\text{O}_3, \text{Sb}_2\text{O}_3$  - amphoteric  
      $\text{Bi}_2\text{O}_3$  - predominantly basic
9. 1 Ease of formation is in the order,  $\text{NH}_3 > \text{PH}_3 > \text{AsH}_3 > \text{SbH}_3 > \text{BiH}_3$
10. 3  $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$  : reducing nature  
      $\text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te} < \text{H}_2\text{O}$  : order of B.Pt.



12. 3 Down the group, stability of hexafluorides decreases
13. 2  $\text{CCl}_4$ ,  $\text{NF}_3$  and  $\text{SF}_6$  are not readily hydrolysed due to non-availability of d-orbitals or steric reasons.
14. 2 Reaction of iodine with water is non-spontaneous
15. 3 Due to small size,  $\text{F}^-$  has high hydration enthalpy and  $\text{F}-\text{F}$  bond has low dissociation enthalpy
16. 1 Order of boiling point is,  $\text{HF} > \text{HI} > \text{HBr} > \text{HCl}$
17. 2 Bond enthalpy follows the order,  $\text{Cl}_2 > \text{Br}_2 > \text{F}_2 > \text{I}_2$
18. 4 Xe and Rn are the rarest elements of the group



20. 3  $2\text{XeF}_2 \xrightarrow{2\text{H}_2\text{O}} 2\text{Xe} + 4\text{HF} + \text{O}_2$   
 $\text{XeF}_6 \xrightarrow{3\text{H}_2\text{O}} \text{XeO}_3 + 6\text{HF}$
21. 5 Boron has the highest first ionisation enthalpy
22. 4  $\text{Pb}^{4+}$  is oxidising in nature
23. 60 Bond angles in  $\text{P}_4$  are  $60^\circ$



25. 2 Complexes (3), (4) do not exist