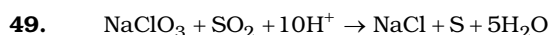
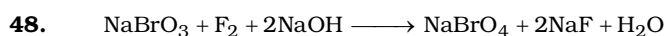
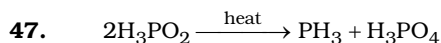
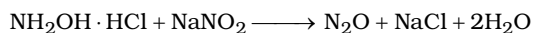
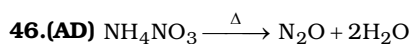


**Daily Tutorial Sheet 4**

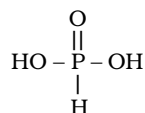
**JEE Advanced (Archive)**



50. Since nitrogen has a small atomic size and a high value of electronegativity so it can form hydrogen bonds and thus association occurs in case of  $\text{NH}_3$ .

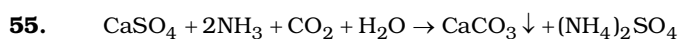
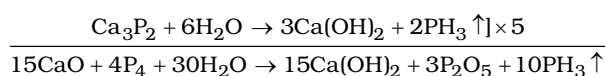
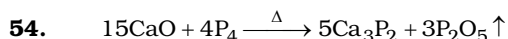
In  $\text{PH}_3$ , P atom has a large size and lower value of electronegativity so hydrogen bonding is not possible and thus no association occurs in  $\text{PH}_3$ .

51.  $\text{H}_3\text{PO}_3$  (orthophosphorous acid) is dibasic as is clear from its structure which contains two  $-\text{OH}$  groups.

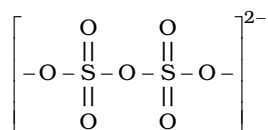


52.(AD)  $\text{NH}_3$  and  $\text{CF}_2\text{Cl}_2$  (Freon-12) are used as refrigerants.

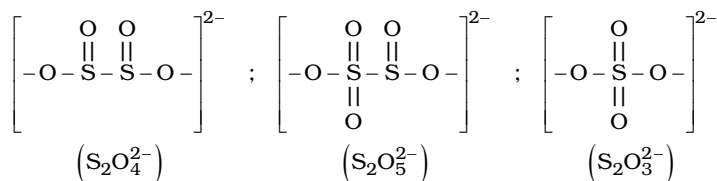
53. The two resonating structures are :



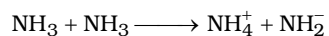
57.(D) In  $\text{S}_2\text{O}_7^{2-}$ , there is no S-S bond.



In it there is S-O-S bond. In all other given ionic compounds we find S-S bond.

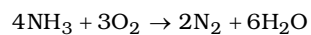


58. Self ionisation of  $\text{NH}_3$  occurs of as follows :



When  $\text{NH}_4\text{Cl}$  is added to ammonia it increases the  $[\text{NH}_4^+]$  and so  $\text{NH}_4\text{Cl}$  acts as an acid in liquid ammonia.

59.  $4\text{KMnO}_4 + 2\text{H}_2\text{O} \rightarrow 4\text{MnO}_2 + 4\text{KOH} + 3\text{O}_2$



60.  $\text{P} + 5\text{HNO}_3 \xrightarrow[\text{(catalyst)}]{\text{I}_2} \text{H}_3\text{PO}_4 + 5\text{NO}_2 + \text{H}_2\text{O}$