

B.M.A College Balaram
 DARBHANGA
 CHEMISTRY. C. CHAUDHARY.

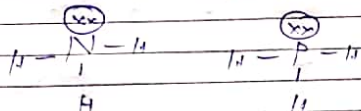
TOPIC:- NITROGEN GROUP

Basic property of NH₃ and PH₃

As per Lewis concept a compound which acts as electron pair donor is called

Base. Both in NH₃ and PH₃ there

is presence of lone pair of electrons so they show basic property



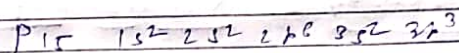
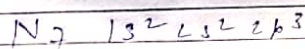
As far as comparative basic strength of both compounds are concerned

basic strength of NH₃ is higher than that of PH₃. The reason behind this is that size of Nitrogen is smaller than that of Phosphorus.

Therefore charge density of electron in ammonia is higher than that of PH₃. Thus NH₃ is more basic

than PH₃.

Nitrogen forms NCl₃ only but Phosphorus forms PCl₃ and PCl₅



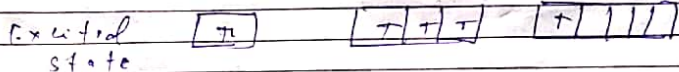
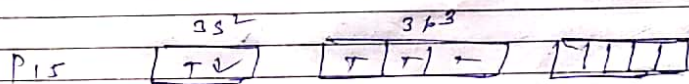
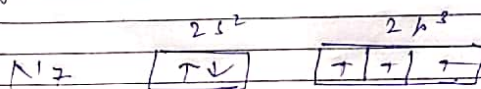
From the electronic configuration of "N" and Phosphorus we see that

in nitrogen there is no vacant "d" orbital

on the other hand in case of Phosphorus

there is vacant "d" orbital. This

fact is represented as



In case of Phosphorus there is vacant d state five unpaired electrons so it forms PCl₃ and PCl₅ both but "N" forms NCl₃

