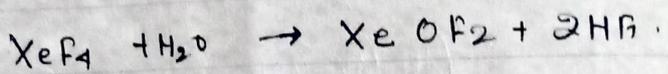


(ii) Xenon oxy difluoride (XeOF_2) \rightarrow

Preparation \rightarrow

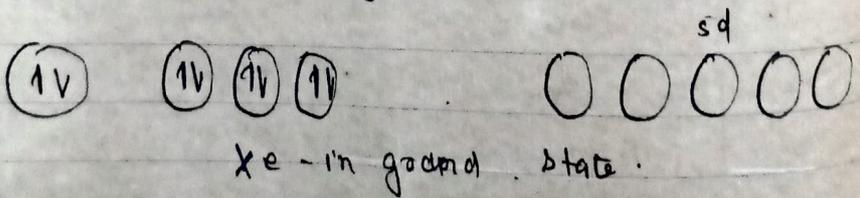
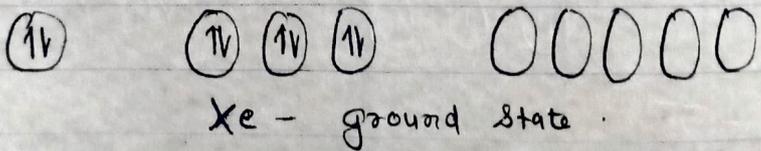
(i) It is prepared by slow and partial hydrolysis of XeF_4 at low temperature.



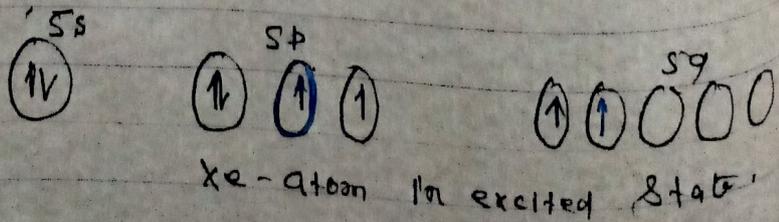
It is not a very stable compound.

Structure of Xenon oxy difluoride \rightarrow

The outer shell electronic configuration of Xe-atom in ground state is



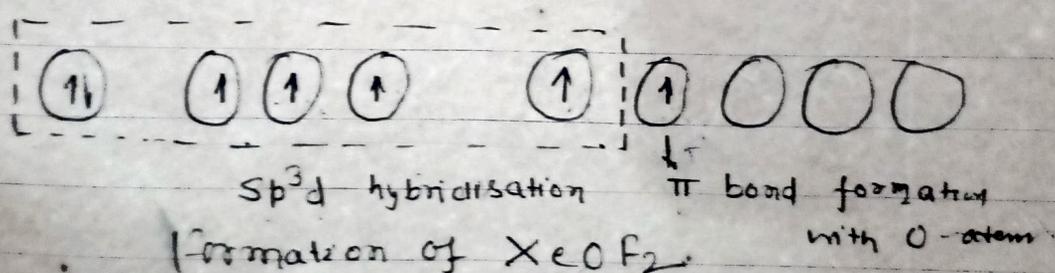
During formation of XeOF_2 it is assumed that two of the sp-electrons move to vacant sd-orbitals giving the electronic configuration as follows.



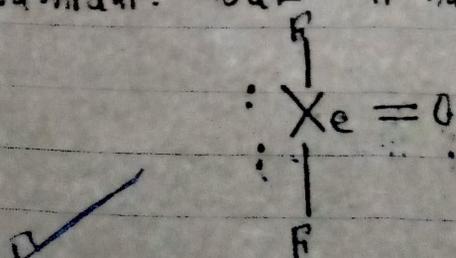
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The formation of Compound involves the hybridisation of one $5s$ orbital, three $5p$ orbitals, and one $5d$ orbital. Two hybrid orbitals are occupied by lone pair of electrons. and three of them are singly occupied.

F-atom has one half filled $2p_z$ -orbital. Three singly occupied hybrid orbitals overlap with half filled $3p_z$ -orbital of the Fluorine atom and with one half-filled atomic orbital of Oxygen atom by the result of this 3-6 bond formation occurs. One unhybridized sd orbital overlaps with a half filled atomic orbital of Oxygen atom forming a π bond.

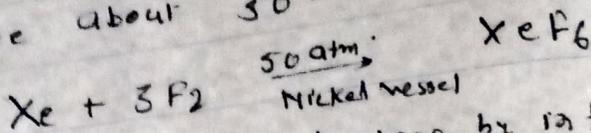


Since the formation of $XeO F_2$ involves sp^3d hybridisation of central atom. So, the molecules should be trigonal bipyramidal. But it has a T-shape structure.

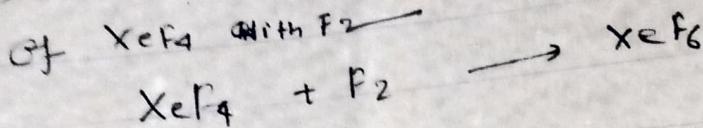


Xenon VI Compounds →

(1) XeF_6 (Xenon hexafluoride) →
It is prepared by heating Xenon with excess of fluorine (1:20 ratio) in a nickel vessel at a pressure about 50 atmosphere.



(2) It can be also prepared by interaction of XeF_4 with F_2



Properties →

(i) It is a solid crystalline substance with m.p. 46°C .

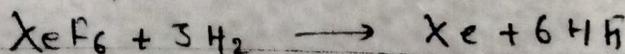
(ii) It is the most volatile of all the fluorides of Xenon. Its vapours have a greenish yellow colour.

(iii) Its solution in HF is good conductor of electricity.

(iv) It is highly reactive. It even reacts with quartz.



(v) It reacts with hydrogen like other fluorides of Xenon.



(vi) It goes under slow hydrolysis with atmospheric moisture producing highly explosive XeO_3 .

