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Date \_\_\_\_\_ TDC Part III Students M/T/W/T/F/S/S

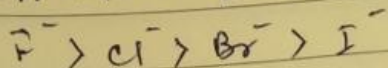
\* Concept of metal type A & metal type B

~~Atar~~, Ahlrand, Chatt & Danice<sup>in 1958</sup> classified the metal ions into type A and type B based upon their preferential bonding with a given ligand & the stability of their complexes. ~~into~~

Type A metal ions include the ions of  $Li^+$  to  $Cs^+$  i.e. of group I, ~~the~~ ions of group II i.e.  $Ba^{2+}$  to  $Ca^{2+}$  and some of the lighter transition metals in higher oxid<sup>n</sup> states i.e.  $Fe^{3+}$ ,  $Co^{3+}$  etc. Type B metal ~~ions~~ are those of heavier transition metals in lower oxid<sup>n</sup> state such as  $Cu^+$ ,  $Ni^{2+}$ ,  $Ag^+$  etc.

Certain ligands tend to form stable complexes with type A metal <sup>ions</sup> & others form stable complexes with type B metal ions. For ex. halides form complexes with type A metals in the sequence of

Important Notes



This tendency to form complexes with type



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Date                      B metal ion is ~~is~~ in the reverse sequence <sup>M/I/W/I/F/I/S</sup>.

This led to classification of ligands  
type A ~~and type B~~ (ex.  $F^-$ ) & type B  
( $I^-$ )

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Important Notes: \_\_\_\_\_