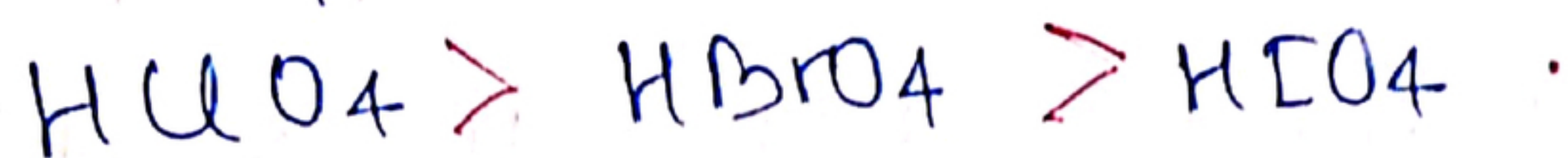




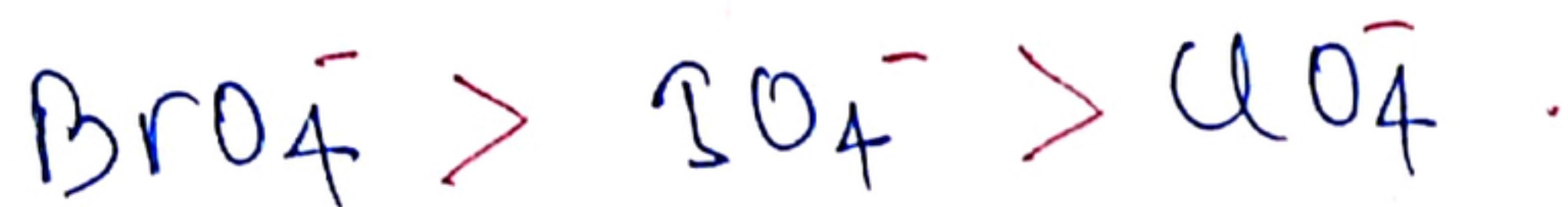
ACID STRENGTH OF PERHALIC ACIDS

- As the E_N of the halogen decreases, the tendency of the XO_3 group to withdraw e^- s of the $O-H$ bond towards itself decreases & hence the acid strength of the perhalic acid decreases

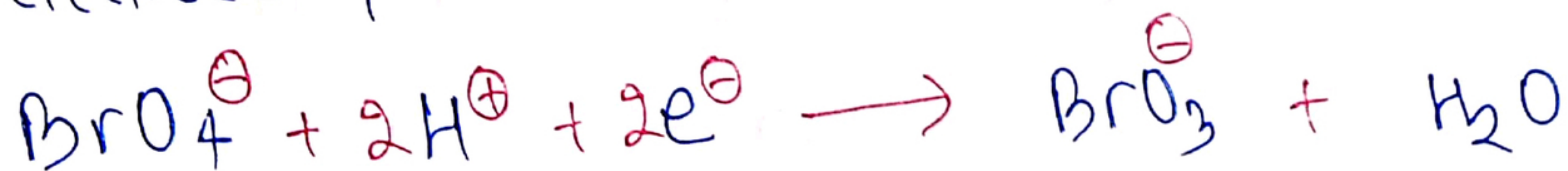


OXIDISING POWER OF PERHALATES

- Perhalates are strong oxidising agents their oxidising power decreases



This order can be explained on the basis of their electrode potentials.



$$E^{\ominus} = 1.74V$$

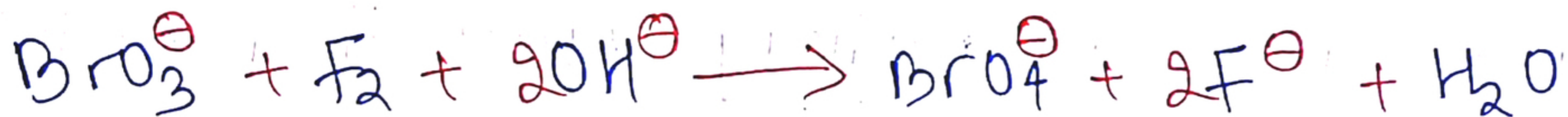


$$E^\circ = 1.65 \text{ V}$$



$$E^\circ = 1.19 \text{ V}$$

Among perhalates, BrO_4^- is the strongest oxidising agent. It is because of this reason that perbromates & perbromic acid can be obtained by oxidation of bromates (BrO_3^-) by F_2 in alkaline solⁿ.



ACID STRENGTH OF OXOACIDS OF THE SAME HALOGEN
IN DIFFERENT O.S



$$\text{pK}_a = \begin{matrix} -10 & -1.2 & 2.0 & 7.5 \end{matrix}$$

$$\text{HClO}_n + \text{H}_2\text{O} \rightleftharpoons \text{H}_3\text{O}^{\oplus} + \text{ClO}_n^{-}$$

ANION
(CONJUGATE BASE)

anion:

$\left[\text{O} - \ddot{\text{Cl}} : \right]^- < \left[\begin{array}{c} \ddot{\text{Cl}} \\ \diagup \quad \diagdown \\ \text{O} \quad \text{O} \end{array} \right]^- < \left[\begin{array}{c} \ddot{\text{Cl}} \\ \diagup \quad | \quad \diagdown \\ \text{O} \quad \text{O} \quad \text{O} \end{array} \right]^- < \left[\begin{array}{c} \text{O} \\ | \\ \text{Cl} \\ | \\ \text{O} \quad \text{O} \end{array} \right]^-$

STABILITY OF THE ION INCREASES

Stability of the anions decreases



Acid strength also decreases

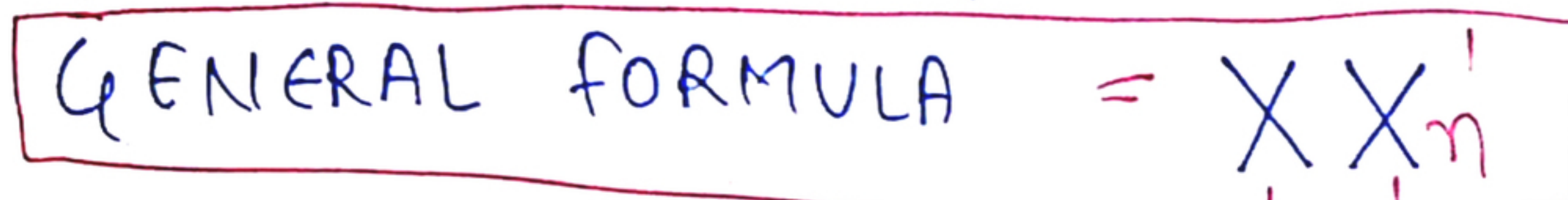


- As the stability of the anion increases, its oxidising power decreases.



INTERHALOGEN COMPOUNDS

- Halogens react with each other to form a no. of comp. called interhalogen compounds.



↓ ↓
LESS MORE E_N element