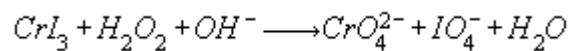
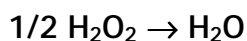


SOLUTION TO CRACK PROBLEM

(45) Balance the following redox reaction in basic medium:



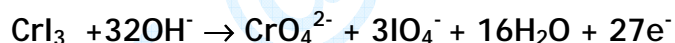
ANS. I) Dividing the complete equation into two **half reactions**, one representing oxidation and the other reduction.



II) In a reaction taking place in a basic medium, every excess of oxygen atom is balanced by adding H_2O on the same side and 2OH^- on the other side.

III) Charge is equalised by adding a suitable number of electrons to the side deficient in negative charge.

IV) Add two equations and finally cancel any term common on both sides.



$1/2 \text{H}_2\text{O}_2 + \text{e}^- \rightarrow \text{OH}^-$ (H_2O which was initially on R.H.S got cancelled while balancing by adding H_2O on L.H.S.)

Overall it's $2\text{CrI}_3 + 27\text{H}_2\text{O}_2 + 100\text{OH}^- \rightarrow 2\text{CrO}_4^{2-} + 6\text{IO}_4^- + 32\text{H}_2\text{O}$

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