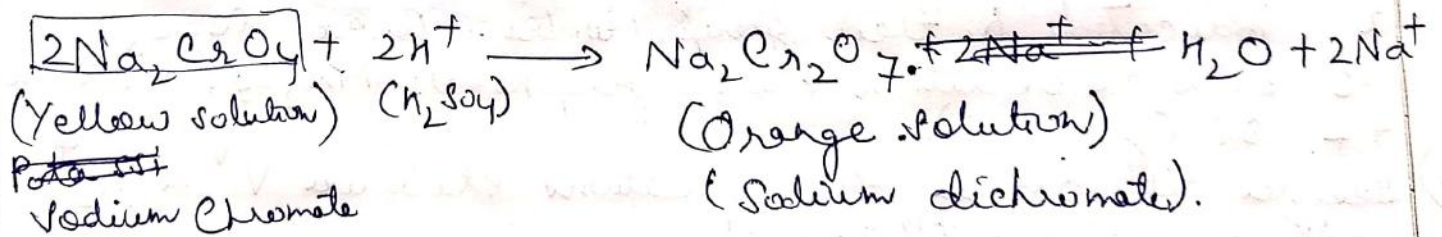
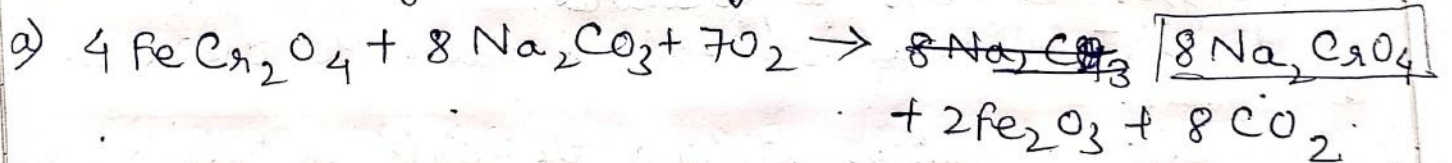
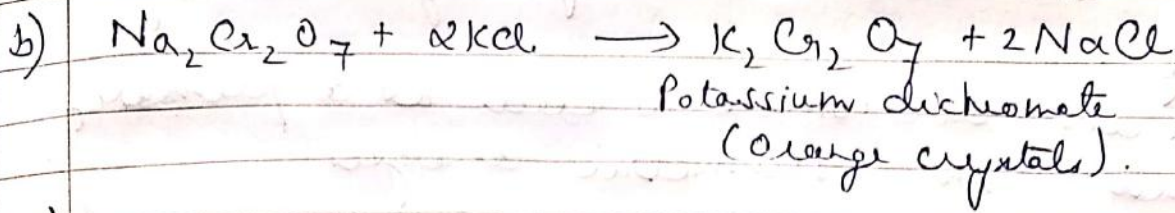


1.4.2. Potassium dichromate $K_2Cr_2O_7$.

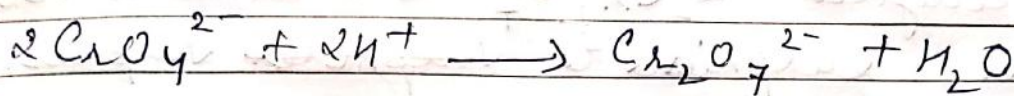
i) Preparation - Dichromates are generally prepared from Chromates. Chromates are formed from the fusion of Chromite ore ($FeCr_2O_4$) with sodium or ~~KNO~~ potassium carbonate in free access of air.



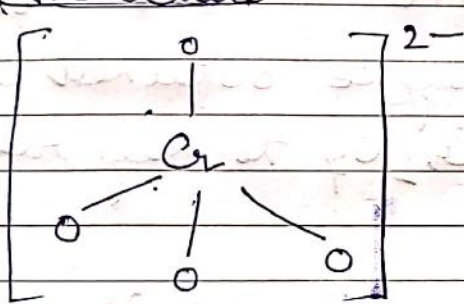
Sodium dichromate is more soluble than Potassium dichromate.



e) The Chromates and dichromates are interconvertible in aqueous solution depending upon pH of the solution.

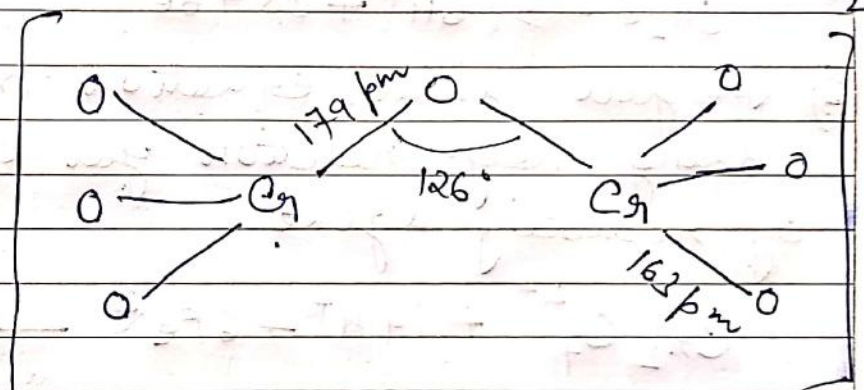


ii) Structure:



Chromate ion

Tetrahedral



Dichromate ion

Two Tetrahedral sharing one corner with $\text{Cr}-\text{O}-\text{Cr}$ bond angle of 126° .

iii) Properties

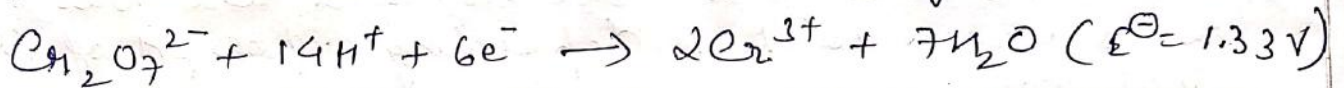
- Sodium and potassium dichromates are strong oxidising agents.
- The sodium salt has a greater stability.

Teacher's Signature : _____

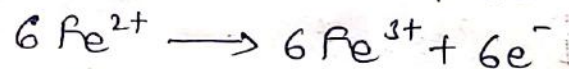
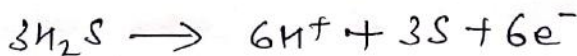
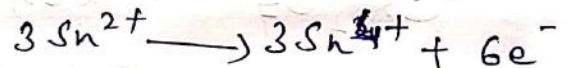
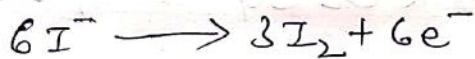
Solubility in water and extremely used as an ~~primary standard~~ oxidising agent in Organic chemistry.

(ii) Potassium dichromate is used as a primary standard in volumetric analysis.

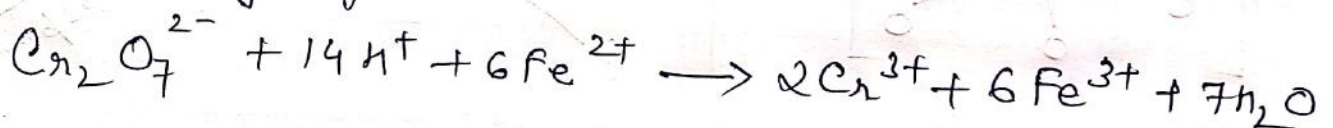
(d) In acidic solutions, its oxidising action:



(e) Thus, acidified $\text{K}_2\text{Cr}_2\text{O}_7$ will oxidise iodides to iodine, sulphides to sulphur, tin (II) to tin (IV) and Fe(II) salts to Fe(III).



(f) The full ionic equation may be obtained by adding half-reaction for $\text{K}_2\text{Cr}_2\text{O}_7$ to half reaction of reducing agent.



(N) Uses-

- $\text{K}_2\text{Cr}_2\text{O}_7$ is used in leather industry.
- It acts as an oxidant for preparation of many azo compounds.