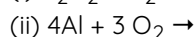
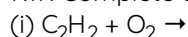
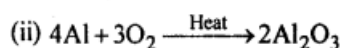




7.17. Complete the following reactions:

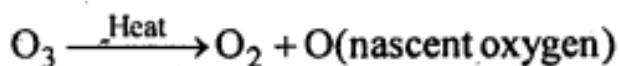


Ans:



7.18. Why does O_3 act as a powerful oxidising agent?

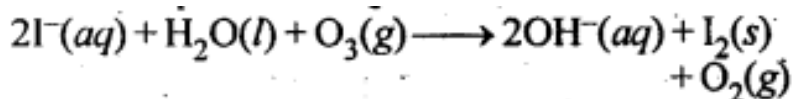
Ans: On heating, O_3 readily decomposes to give O_2 and nascent oxygen.



Since nascent oxygen is very reactive, therefore, O_3 acts as a powerful oxidising agent.

7.19. How is O_3 estimated quantitatively?

Ans: When O_3 is treated with excess of KI solution buffered with borate buffer (pH = 9.2), I_2 is liberated quantitatively.

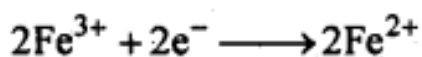
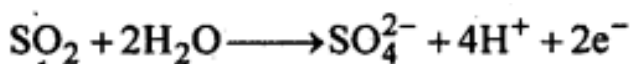


The I_2 thus liberated is titrated against a standard solution of sodium thiosulphate using starch as an indicator.



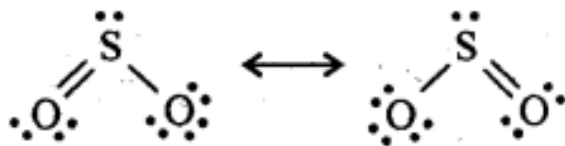
7.20. What happens when sulphur dioxide is passed through an aqueous solution of Fe(III) salt?

Ans: SO_2 acts as a reducing agent and reduces aqueous solution of Fe (III)salt to Fe (II) salt.



7.21. Comment on the nature of two S-O bonds formed in SO_2 molecule. Are the two S-O bonds in this molecule equal ?

Ans: SO_2 exists as an angular molecule with OSO bond angle of 119.5° . It a resonance hybrid of two canonical-forms:

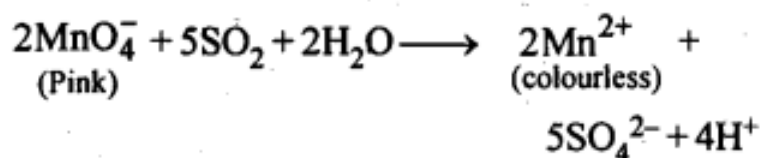


Due to resonance, the two π -bonds are equal.

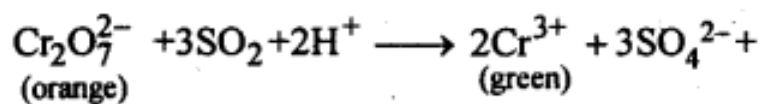
7.22. How is the presence of SO_2 detected ?

Ans. SO_2 is a pungent smelling gas. It can be detected by two test:

(i) SO_2 turns pink colour of KMnO_4 to colourless due to reduction of MnO_4^- to Mn^{2+}



(ii) It turns orange colour of acidified $\text{K}_2\text{Cr}_2\text{O}_7$ to green due to reduction of $\text{Cr}_2\text{O}_7^{2-}$ to Cr^{3+}



***** END *****