

Q.1 Bond enthalpy of fluorine is lower than that of chlorine? Giver reasons for the same.

Ans: Relatively large electron-electron repulsion among the lone pairs of F_2 molecule but they are relatively much closer to each other in Cl_2 molecule.

Q.2 Give the IUPAC name of the following compound:

(CH₃)₃-C-C-COOH



Ans: 3,3-Di methyl-2-oxobutanoic acid.

Q.3 Give the electronic configuration of d-orbitals of $K_3Fe(CN)_6$ and K_3FeF_6 and explain why these complexes give different colour with same solution. (At. No. Of Fe=26)14. Oxidation state of Fe in $K_3Fe(CN)_6$ is +3.

Ans: Configuration of Fe^{3+} is $[Ar]3d^5$ it has 5 unpaired electrons in 3d orbital which get paired leaving behind one unpaired electron only. In K_3FeF_6 oxidation state of Fe is +3 and 5 unpaired electrons are there in 3d orbitals. Because of the presence of different no. of unpaired electrons these impart different colour of the solution.

Q.4 Give a reason for the following : (i) Why the rough surface of catalyst is more effective than smooth surface. (ii) When the smoke is passed through charged plates before allowing it to come out of chimneys in factories. (iii) Neon gets easily absorbed over charcoal than Helium.

Ans: (i) The rough surface of a catalyst provides more surface area for adsorption.

(ii) So that the charged carbon particles which are not burnt settle between the charged plate leaving behind air free from pollutants.

(iii) Ne has higher critical temperature i.e stronger van der waal's forces therefore easily adsorbed.

Q.5 (a) Give one example of each of the following: (i) Acidic flux (ii) Basic flux (b) What happens when Cu_2O undergoes self reduction in a silica line converter and What happens when Hematite oxidizes carbon to carbon monoxide.

Ans: (a) Acidic flux is SiO_2 Basic flux is CaO .

(b) (i) Cu_2O (cuprous oxide) undergoes self reduction to form blister copper as:

