

Daily Tutorial Sheet 2

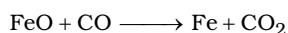
Level – 1

16.(C) $\text{Cr}^{2+} (Z = 24) : [\text{Ar}] 3d^4 4s^0$; four unpaired electrons

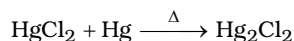
$\text{Fe}^{2+} (Z = 26) : [\text{Ar}] 3d^6 4s^0$; four unpaired electrons. Cr^{2+} and Fe^{2+} have same number of unpaired electrons, hence they have the same value of magnetic moment.

17.(C) $\text{Zn} + 2\text{NaOH} \longrightarrow \text{Na}_2\text{ZnO}_2 + \text{H}_2$ $\therefore$ Zn liberates hydrogen with hot conc. alkali.

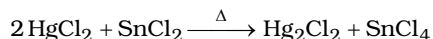
18.(D) On igniting at 1400°C , Fe_2O_3 get reduced to metallic Fe.



19.(D) Mercurous chloride (calomel) is prepared by heating HgCl_2 and Hg in iron vessel.

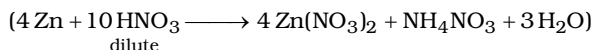
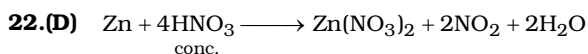


It can also be prepared by the reduction of mercury (II) chloride by tin (II) chloride in a limited quantity.



20.(C) $\text{FeSO} \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$ is called Mohr's salt.

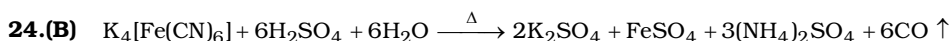
21.(D) Zinc sulphate hepta hydrate ($\text{Zn} = \text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$) is called white vitriol. When it is heated with barium sulphide, it forms a white pigment lithopone.



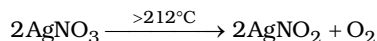
23.(C) Mohr salt = $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot 6\text{H}_2\text{O}$

Here, Fe is present as FeSO_4 . Therefore, its oxidation state can be calculated as in only FeSO_4 .

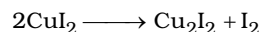
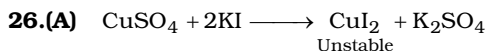
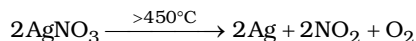
$$x + (-2) = 0 \quad \Rightarrow \quad x = +2$$



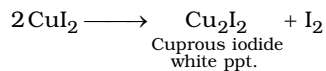
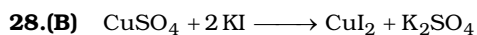
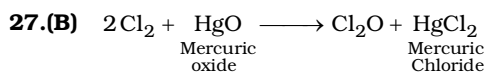
25.(A) Silver nitrate decomposes to silver nitrite on heating above its melting point (212°C).



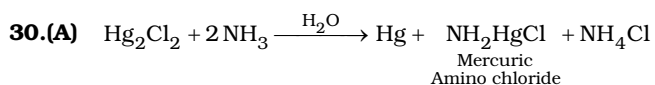
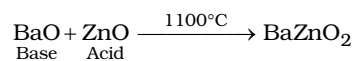
On heating above 450°C (red hot), silver nitrate decomposes to metallic silver, oxide of nitrogen and oxygen.



Thus, CuI_2 is not formed



29.(C) Philosopher's wool on heating with BaO at 1100°C produce BaZnO_2 .



$\therefore$ Hg_2Cl_2 on reaction with NH_4OH (or $\text{NH}_3 + \text{H}_2\text{O}$) forms mercuric amino chloride.