

Daily Tutorial Sheet-3 Level-1
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**31.(B)** 
$$\stackrel{^{+5}}{\mathrm{N}} \stackrel{^{-}}{\mathrm{O}_3} \longrightarrow \mathrm{N}_2^0; \qquad \stackrel{^{-3}}{\mathrm{N}} \stackrel{^{+}}{\mathrm{H}_4} \longrightarrow \mathrm{N}_2^0$$

**32.(C)** 
$$\stackrel{-3}{\text{NH}_4} \stackrel{+5}{\text{NO}_3} \longrightarrow \stackrel{+1}{\text{N}_2} \text{O}$$

Since same atom is not reduced & oxidised.

33.(C) 
$$H_2^{-2} \xrightarrow{O} S + 2H_2O$$
Oxidation

The oxidation of S shows oxidising nature of  $H_2O_2$ . Also observe that oxidation state of O-atom in  $H_2O_2$ increases from -1 to -2 in  $H_2O$ .

**34.(B)** 
$$O_2^0 \longrightarrow H_2O^{-2}$$
 Oxygen is reduced, so it works as O.A (In others, O.S is increasing).

**35.(D)** 
$$Cr_2O_7^{2-} + 6Fe^{2+} + 14H^+ \longrightarrow 6Fe^{3+} + 2Cr^{3+} + 7H_2O^{2+}$$

**36.(C)** 
$$3Br_2 + 6OH^- \longrightarrow 5Br^- + BrO_3^- + 3H_2O$$

**37.(C)** 
$$2I^- \longrightarrow I_2 + 2e^-$$
 (Oxidation)

$$2IO_3^- + 12H^+ + 10e^- \longrightarrow I_2 + 6H_2O$$
 (Reduction)

**38.(A)** 
$$\stackrel{+2}{\text{SnCl}_2} + \stackrel{+2}{\text{2HgCl}_2} \rightarrow \stackrel{+4}{\text{SnCl}_4} + \stackrel{+1}{\text{Hg}_2} \stackrel{}{\text{Cl}_2} \text{(s)}$$

**39.(B)**  $SO_2$  bleaches by reduction while chlorine bleaches colour of flowers by oxidation.

**40.(B)** 
$$\operatorname{Br} O_3^- \longrightarrow \operatorname{Br} O^-$$

It is reduction, so needs a reducing agent.

**41.(A)** 
$$N_2^0 \longrightarrow 2N^{-3} \Rightarrow E_{N_2} = \frac{28}{6} \approx 4.67$$

**42.(D)** NaHC<sub>2</sub>O<sub>4</sub> 
$$\xrightarrow{\text{as acid}}$$
 n = 1

$$\xrightarrow{\text{as a}} n = 2$$

43.(A) 
$$Cl_2$$
  $Cl^- + ClO^-$  Using the standard result:
$$n_2 = 1$$

$$\frac{1}{n_2} - \frac{1}{n_2} + \frac{1}{n_2} - \frac{1}{n_2} - \frac{1}{n_2} + \frac{1}{n_2} - \frac{1}{n_2} - \frac{1}{n_2} + \frac{1}{n_2} - \frac{1}{n_2}$$

$$\Rightarrow \qquad \frac{1}{n} = \frac{1}{n_1} + \frac{1}{n_2} = \frac{1}{2} + \frac{1}{2} \quad \Rightarrow \quad n = 1$$

Otherwise observe that 2 moles of –e are involved per 2 mol of  $\operatorname{Cl}_2 \ \Rightarrow \ n$  = 1.

**44.(C)** 
$$\stackrel{+7}{Mn}O_4^- \xrightarrow{n=5} Mn^{2+}$$
 (in acidic medium) 
$$\xrightarrow{n=1} MnO_4^{2-}$$
 (in basic medium)

$$\xrightarrow{\text{n = 3}} \text{MnO}_2 \qquad \text{(in neutral medium)}$$



$$\textbf{45.(B)} \quad \mathop{\mathrm{Fe}}_2^{+3}(C_2O_4)_3 \xrightarrow[n=6]{} CO_2 + \mathrm{Fe}^{3+} \qquad \left[ \begin{matrix} 2\mathrm{Fe}^{3+} & \longrightarrow 2\mathrm{Fe}^{3+} + 0\mathrm{e}^- \\ 3C_2O_4^{2-} & \longrightarrow 6\mathrm{CO}_2 + 6\mathrm{e}^- \end{matrix} \right] \Rightarrow n = 6$$

$$\Rightarrow$$
 gmeq = 6 × 1

$$MnO_4^- \xrightarrow[n=5]{} Mn^{2+} \ \Rightarrow \ gmeq = x \times 5$$

g meq of  $Fe_2(C_2O_4)_3 = g \text{ meq of } MnO_4^-$ 

$$1 \times 6 = \mathbf{x} \times 5 \qquad \Rightarrow \qquad \mathbf{x} = \frac{6}{5}$$