DPP
DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SOLUTION

SUBJECT : CHEMISTRY
DPP NO. : 6

Topic :-REDOX REACTIONS

1 **(d)**

$6 \times a + 12 \times 1 + 6 \times (-2) = 0$

$\therefore a = 0$

2 **(b)**

$Mn^{7+} + 5e \longrightarrow Mn^{2+}$

3 **(a)**

$2 \times 2 + 2 \times a + 7 \times (-2) = 0$

$\therefore a = +5$

4 **(c)**

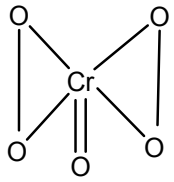
Eq. of Cl_2 = eq. of chloride

$1 \times 2 = \frac{111}{E + 35.5}$

$\therefore E = 40$

$\therefore M = 40 \times 2 = 80$ (Metal is bivalent.)

5 **(b)**



It is chromium peroxide.

Let the oxidation number of Cr is $''x''$.

$Cr^{x+} + O_2^- + O^{2-} + O_2^- - CrO_5$

$x + (-1)2 + (-1)2 + (-2)1 = 0$

$x - 6 = 0$

$x = +6$

Hence, the oxidation state of Cr is +6.

6 **(d)**

Haematite is Fe_2O_3, in which oxidation number of iron is III.

Magnetite is Fe_3O_4 which is infact a mixed oxide $(FeO.Fe_2O_3.)$, hence iron is present in both II and III oxidation state.

7 **(c)**

$K_2Cr_2O_7 + 2KOH \longrightarrow 2K_2CrO_4$

(red-orange) (lemon-yellow)

8 **(a)**

In basic medium

$2KMnO_4 + 2KOH \longrightarrow 2K_2MnO_4 + H_2O + O$

Net reaction is $\overset{+7}{MnO_4^-} \longrightarrow \overset{+6}{MnO_4^{-2}}$

Change in oxidation number

$= 7 - 6 = +1$

So, electrons involved $= 1e^-$

9 **(a)**

In NH_4^+, N has ox.no. -3 and in NO_3^-, N has ox.no. $+5$.

10 **(c)**

$a + 6 \times (-1) = -2$

$\therefore a = +4$

11 **(c)**

$1 + 1 \times (-2) + a = 0$

$\therefore a = +1$

12 **(a)**

$e + N^{5+} \longrightarrow N^{4+}$; Thus, HNO_3 is oxidant.

13 **(a)**

$H^0 \longrightarrow H^{1+} + 1e$.

314 **(d)**

$S \xrightarrow{O_2} SO_2 \xrightarrow{Cl_2} SO_4^{2-} \xrightarrow{BaCl_2} BaSO_4$One mole of S will give one mole of $BaSO_4$. Thus, mole of $BaSO_4$ formed = mole of $S = \frac{8}{32} = \frac{1}{4}$

15 **(d)**

$[Mn^{7+} + 5e \longrightarrow Mn^{2+}] \times 3$

$[Fe^{2+}C_2^{3+}O_4 \longrightarrow Fe^{3+} + 2C^{4+}O_2 + 3e] \times 5$

16 **(c)**

Equal equivalent of species react together.

17 **(a)**

It is a fact.

18 **(c)**

The balanced disproportionation reaction involving white phosphorus with aq. NaOH is

Oxidation of P^0 to P^{+1} state

$\overset{0}{P_4} + 3NaOH + 3H_2O \longrightarrow \overset{-3}{PH_3} + 3\overset{+1}{NaH_2PO_2}$

Reduction of P^0 to P^{-3} state

19 **(b)**

F can have only –ve ox.no., *i.e.*, $2e + F_2^0 \longrightarrow 2F^{1-}$ or F_2 can be reduced only.

20 **(a)**

$(N^0)_2 + 6e \longrightarrow 2(N^{3-})$

$3(H^0)_2 \longrightarrow 2(H^{+1})_3 + 6e$

$E_{N_2} = \frac{28}{6}; E_{NH_3} = \frac{17}{3}$

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	B	A	C	B	D	C	A	A	C
Q.	11	12	13	14	15	16	17	18	19	20
A.	C	A	A	D	D	C	A	C	B	A