CHEMISTRY

Redox Reactions

31. Which of the following arrangements represent increasing oxidation number of the central atom?

(1) $CrO_2^-, ClO_3^-, CrO_4^{2-}, MnO_4^-$

(2) $ClO_3^-, CrO_4^{2-}, MnO_4^-, CrO_2^-$

(3) $CrO_2^-, ClO_3^-, MnO_4^-, CrO_4^{2-}$

(4) $CrO_4^{2-}, MnO_4^-, CrO_2^-, ClO_3^-$

32. For the redox reaction

$MnO_4^- + C_2O_4^{2-} + H^+ \rightarrow Mn^{2+} + CO_2 + H_2O$

	MnO_4^-	$Cr_2O_4^{2-}$	H^+
(1)	15	5	2
(2)	2	5	16
(3)	5	16	2
(4)	2	16	5

33. Which of the following reactions does not involve either oxidation or reduction?

(1) $VO^{2+} \rightarrow V_2O_3$

(2) $Na \rightarrow Na^+$

(3) $CrO_4^{2-} \rightarrow Cr_2O_7^{2-}$

(4) $Zn^{2+} \rightarrow Zn$

34. $Cr_2O_7^{2-} + x \xrightarrow{H^+} Cr^{3+} + H_2O +$ oxidised product of X, X in the above reaction cannot be

(1) $C_2O_4^{2-}$ (2) Fe^{2+}

(3) SO_4^{2-} (4) S^{2-}

35. Which of the following is not a disproportionation reaction?

I. $NH_4NO_3 \xrightarrow{heat} N_2O + H_2O$

II. $P_4 \xrightarrow{heat} PH_3 + HPO_2^-$

III. $PCl_5 \xrightarrow{heat} PCl_3 + Cl_2$

IV. $H_2O_2 \rightarrow O_2 + 2e^-$

(1) I, II (2) I, III, IV

(3) II, IV (4) I, III

Redox Reactions and Electrode Processes

36. The reaction (B)

$$2\overset{+1}{H_2}\overset{-1}{O}(l) \xrightarrow{heat} 2\overset{0}{H_2}(g) + \overset{0}{O_2}(g)$$

an example

(1) addition reaction

(2) decomposition reaction

(3) displacement reaction

(4) none of these

37. In the following unbalanced redox reaction,

$Cu_3P + Cr_2O_7^{2-} \rightarrow Cu^{2+} + H_3PO_4 + Cr^{3+}$

equivalent weight of H_3PO_4 is

(1) $\frac{M}{3}$ (2) $\frac{M}{6}$

(3) $\frac{M}{7}$ (4) $\frac{M}{8}$

38. Oxidation state of hydrogen in KH, MgH_2 and NaH respectively would be

(1) –1, –1 and –1

(2) +1, +1 and +1

(3) +2, +1 and –2

(4) –2, –3 and –1

39. During the electrolysis of molten sodium chloride, the time required to produce 0.1 mol of chlorine gas using a current of 3 A in?

(1) 55 minutes

(2) 110 minutes

(3) 220 minutes

(4) 330 minutes

40. In which of the following reactions H_2O_2 acts as a reducing agent?

(1) $H_2O_2 + 2H^+ + 2e^- \rightarrow 2H_2O$

(2) $H_2O_2 + 2e^- \rightarrow O_2 + 2H^+$

(3) $H_2O_2 + 2e^- \rightarrow 2OH^-$

(4) $H_2O_2 + 2OH^- - 2e^- \rightarrow O_2 + 2H_2O$