Electro Chemistry Part-III

1. What is the electrochemical equivalent (in g coulomb^{-1}) of silver? [M2005]

1) 108F 2)108/F 3) 108/96500 4) 96500/108

2. Which reaction is not feasible? (CBSE PMT)

1) $2KI + Br_2 \rightarrow 2KBr + I_2$

2) $2KBr + I_2 \rightarrow 2KI + Br_2$

3) $2KBr + Cl_2 \rightarrow 2KCl + Br_2$

4) $2H_2O + 2F_2 \rightarrow 4HF + O_2$

3. The standard Potentials at 25^0 C for the half reactions are given against them below $Zn^{2+} + 2e^- \rightarrow Zn; E^0 = -0.762V$, $Mg^{2+} + 2e^- \rightarrow Mg; E^0 = -2.37V$ **(M-2009)**

When Zn dust is added to a solution of $MgCl_2$

1) Magnesium is precipitated

2) Zinc dissolves in the solution

3) Zinc chloride is formed

4) No reaction takes place

4 For the following cell reaction (E-2009)

$Ag|Ag^+|AgCl|Cl^-|Cl_2$, Pt;

ΔG_f^0 **(AgCl) = – 109kJ/mol,**

$\Delta G_f^0(Cl^-) = -129KJ/mol$ **and** $\Delta G^0 f(Ag^+) = 78KJ/mol$ **.E^0 of the cell is**

1) -0.60v 2)0.60v 3)6.0v 4) None

5. During the charging of a lead-acid storage battery, the cathode reaction is (M-2009)

1) Formation of $PbSO_4$ 2) Reduction of Pb^{+2} to Pb

3) Formation of PbO_2 4) Oxidation of Pb to $Pb^{2t`}$

6. When 3.86 amperes current are passed through an electrolyte for 50 minutes, 2.4 grams of a divalent metal is deposited. The gram atomic weight of the metal (in grams) is (M-2007)

1) 24 2) 12 3) 64 4) 40

7 What is the quantity of electricity (in coulombs) required to deposit all the silver from 250 ml of 1 M $AgNO_3$ solution? (Ag = 108) (E - 2005)

1) 2412.5 2) 24125 3) 4825.0 4) 48250

KEY

1)3 2)2 3) 4 4) 2 5) 2 6) 4 7) 2