## CHEMISTRY

31. At 25 °C specific conductivity of a normal solution of KCl is 0.002765 mho $cm^{-1}$. The resistance of cell is 400 ohms. The cell constant is
(1) 0.815 (2) 1.016
(3) 1.106 (4) 2.016

32. The standard reduction potentials at 298 K for the following half reactions are given against each
$Zn^{2+}(aq.) + 2e \rightleftharpoons Zn(s)$ ; –0.762
$Cr^{3+}(aq) + 3e \rightleftharpoons Cr(s)$ ; –0.740
$2H^{+}(aq) + 2e \rightleftharpoons H_2(g)$ ; 0.00
$Fe^{3+}(aq) + e \rightleftharpoons Fe^{2+}(aq)$ ; 0.770
Which is the strongest reducing agent
(1) Zn(s) (2) Cr(s)
(3) $H_2(g)$ (4) $Fe^{2+}(aq)$

33. The standard electrode potentials of $Zn^{2+}/Zn$ and $Ag^{+}/Ag$ are $-0.763$ V and $+0.799$ V respectively. The standard potential of the cell is
(1) 1.56 V (2) 0.036 V
(3) – 1.562 V (4) 0.799 V

34. EMF of cell
$Ni \mid Ni^{2+}(1.0\,M) \parallel Au^{3+}(1.0\,M) \mid Au$ (Where $E^{o}$ for $Ni^{2+} \mid Ni$ is –0.25 V; $E^{o}$ for $Au^{+3} \mid Au$ is 1.50 V) is
(1) + 1.25 V (2) –1.75 V
(3) + 1.75 V (4) + 4.0 V

35. The amount of ion discharged during electrolysis is not directly proportional to
(1) Resistance
(2) Time
(3) Current
(4) Chemical equivalent of the ion

36. In electrolysis of aqueous copper sulphate, the gas at anode and cathode is
(1) $O_2$ and $H_2$
(2) $SO_2$ and $H_2$
(3) $H_2$ and $O_2$
(4) $SO_3$ and $O_2$

37. Amount of electricity that can deposit 108 gm of silver from $AgNO_3$ solution is
(1) 1 ampere
(2)1 coulomb
(3) 1 faraday
(4) None of the above

38. When 9.65 coulombs of electricity is passed through a solution of silver nitrate (atomic weight of Ag = 107.87 taking as 108) the amount of silver deposited is
(1) 10.8 mg (2) 5.4 mg
(3) 16.2 mg (4) 21.2 mg

39. The platinum electrodes were immersed in a solution of cupric sulphate and electric current passed through the solution. After sometime it was found that colour of copper sulphate disappeared with evolution of gas at the electrode. The colourless solution contains
(1) Platinum sulphate
(2) Copper hydroxide
(3) Copper sulphate
(4) Sulphuric acid

40. In a metal oxide, there is 20% oxygen by weight. Its equivalent weight is
(1) 40 (2) 64
(3) 72 (4) 32

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