NEET CHEMISTRY

Topic: Electrochemistry

Q.1 In an electrolytic cell current flows from -
(1) Cathode to anode in outer circuit
(2) Anode to cathode outside the cell
(3) Cathode to anode inside the cell
(4) Anode to cathode inside the cell

Q.2 In electrolysis of a fused salt, the weight deposited on an electrode will not depend on-
(1) Temperature
(2) Current intensity
(3) Electrochemical equivalent of ions
(4) Time for electrolysis

Q.3 If mercury is used as cathode in the electrolysis of aqueous NaCl solution,
the ions discharged at cathode are-
(1) H^+
(2) Na^+
(3) OH^-
(4) Cl^-

Q.4 Which of the following solutions has the highest equivalent conductance ?
(1) 0.01M NaCl
(2) 0.050 M NaCl
(3) 0.005M NaCl
(4) 0.02M NaCl

Q.5 Three Faradays of electricity are passed through molten Al_2O_3, aqueous solution of $CuSO_4$ and molten NaCl taken in three different electrolytic cells. The amount of Al, Cu and Na deposited at the cathodes will be in the ratio of-
(1) 1 mole : 2 mole : 3 mole
(2) 1 mole : 1.5 mole : 3 mole
(3) 3 mole : 2 mole : 1 mole
(4) 1 mole : 1.5 mole : 2 mole

Q.6 E^o values of Mg^{2+} |Mg, Fe^{2+}| Fe and Zn^{2+} | Zn are – 2.37 V, – 0.44 V and – 0.76 V respectively.
The correct statement is -
(1) Mg oxidises Fe
(2) Zn oxidises Fe
(3) Zn reduces Mg^{2+}
(4) Zn reduces Fe^{2+}

Q.7 The Zn acts as sacrificial or cathodic protection to prevent rusting of iron because -
(1) E^0_{OP} of Zn < E^0_{OP} of Fe
(2) E^0_{OP} of Zn > E^0_{OP} of Fe
(3) E^0_{OP} of Zn = E^0_{OP} of Fe
(4) Zn is cheaper than iron

Q.8 Number of faraday required to liberate 8g of H_2 is-
(1) 8   (2) 16   (3) 4   (4) 2

Q.9 Consider the following electrolytes -
a. $AgNO_3$ b. $CuSO_4$
c. $AlCl_3$ d. $Bi_2(SO_4)_3$
The quantity of electricity needed to electrolytes separately 1 M solutions of these electrolytes will be (F is faraday) -
(1) 1F, 2F, 3F, 6F   (2) 2F, 3F, 6F, 1F
(3) 3F, 6F, 2F, 1F   (4) 6F, 3F, 2F, 1F

Q.10 The electrode potential measures the -
(1) Tendency of the electrode to gain or lose electrons
(2) Tendency of a cell reaction to occur
(3) Difference in the ionisation potential of electrode and metal ion
(4) Current carried by an electrode

Q.11 Point out the correct statement about $Zn - CuSO_4$ cell
(1) The flow of electrons occurs from copper to zinc
(2) The value of E^0_{Red} of copper electrode is less than that of zinc electrode.
(3) Zinc is anode while Cu is cathode electrode
(4) All the statements are correct

Q.12 Which of the following KCl solution has lowest value of specific conductance-
(1) 1 M   (2) 0.1 M
(3) 0.01 M   (4) 0.001 M

Q.13 Which of the following KCl solution has value of equivalent conductance-

(1) 1 M   (2) 0.1 M

(3) 0.01 M   (4) 0.001 M

Q.14 If V, in the equation π = sp. cond. × V, is the volume in CC containing 1 equ. of the electrolyte;

V for a solution will be :
(1) 10 c.c.   (2) 100 c.c.
(3) 1000 c.c.   (4) 10,000 c.c.

Q.15. The specific conductances in $ohm^{-1} \ cm^{-1}$ of four electrolytes P,Q,R and S are given in brackets :
$P (5.0 \times 10^{-5})$ $Q (7.0 \times 10^{-8})$
$R (1.0 \times 10^{-10})$ $S (9.2 \times 10^{-3})$
The one that offers highest resistance to the passage of electric current is
(1) P   (2) S   (3) R   (4) Q

Q.16 The specific conductance of a salt of 0.01 M concentration is 1.061×10^{-4}.
Molar conductance of the same solution will be :
(1) 1.061×10^{-4} (2) 1.061
(3) 10.61   (4) 106.1

Q.17 Which of the following solutions of NaCl will have highest specific conductance ?
(1) 0.001   (2) 0.1 N
(3) 0.01 N   (4) 1.0 N

Q.18 The conductivity of a saturated solution of $BaSO_4$ is 3.06×10^{-6} ohm^{-1} cm^{-1} and its molar conductance is 1.53 ohm^{-1} cm^{-1} mol^{-1}.
The K_{sp} of $BaSO_4$ will be
(1) 4×10^{-12} (2) 2.5×10^{-9}
(3) 2.5×10^{-13} (4) 4×10^{-6}

Q.19 Which statement is not correct :
(1) Conductance of an electrolytic solution increases with dilution
(2) Conductance of an electrolytic solution decreases with dilution
(3) Specific conductance of an electrolytic solution decreases with dilution
(4) Equivalent conductance of an electrolytic solution increases with dilution

Q.20 The resistance of 0.01 N solution of an electrolyte was found to be 210 ohm at 298 K using a conductivity cell of cell constant 0.66 cm^{-1}. The equivalent conductance of solution is :
(1) 314.28 mhocm^2 eq^{-1}
(2) 3.14 mho cm^2 eq^{-1}
(3) 314.28 mho^{-1} cm^2 eq^{-1}
(4) 3.14 mho^{-1} cm^2 eq^{-1}

Q.21 The molar conductance at infinite dilution of $AgNO_3$, $AgCl$ and $NaCl$ are 116.5, 121.6 and 110.3 respectively. The molar conductances of $NaNO_3$ is :
(1) 111.4   (2) 105.2
(3) 130.6   (4) 150.2

Q.22 The equivalent conductivity of 0.1 N CH_3COOH at 25°C is 80 and at infinite dilution 400.
The degree of dissociation of CH_3COOH is :
(1) 1   (2) 0.2
(3) 0.1   (4) 0.5

Q.23 The process in which chemical change occurs on passing electricity is termed :
(1) ionisation   (2) neutralisation
(3) electrolysis   (4) hydrolysis

Q.24 The amount of an ion discharged during electrolysis is not directly proportional to :
(1) resistance
(2) time
(3) current strength
(4) electrochemical equivalent of the element

Q.25 Faraday's laws of electrolysis are related to the :
(1) atomic number of the cation
(2) equivalent weight of the anion
(3) equivalent weight of the electrolyte
(4) speed of the cation

Q.26 Number of electrons involved in the electrodeposition of 63.5 gm. of Cu from a solution of $CuSO_4$ is :
(1) 6.022×10^{23} (2) 3.011×10^{23}
(3) 12.044×10^{23} (4) 6.022×10^{22}

Q.27 When one coulomb of electricity is passed through an electrolytic solution the mass deposited on the electrode is equal to :
(1) equivalent weight
(2) molecular weight
(3) electrochemical equivalent
(4) one gram

Q.28 When one Faraday of electric current is pass, the mass deposited is equal to :
(1) one gram equivalent
(2) one gram mole
(3) electrochemical equivalent
(4) half gram equivalent

Q.29. On passing one Faraday of electricity through a dilute solution of an acid, the volume of hydrogen obtained at N.T.P. is :
(1) 22400 ml. (2) 1120 ml.
(3) 2240 ml. (4) 11200 ml.

Q.30 W g of copper deposited in a copper voltameter when an electric current of 2 ampere
is passed for 2 hours. If one ampere of electric current is passed for 4 hours
in the same voltameter, copper deposited will be :
(1) W (2) W/2
(3) W/4 (4) 2W

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10
Ans.	1	1	2	3	2	4	2	1	1	1
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	3	4	1	4	3	3	3	3	4	4
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	2	2	3	1	3	3	3	1	4	1