

Topic :- Electro Chemistry

- Total charge on 1 mole of a monovalent metal ion is equal to :
a) 6.28×10^{18} coulomb b) 1.6×10^{-19} coulomb c) 9.65×10^4 coulomb d) None of these
- For which case Λ values $vs\sqrt{c}$ show a straight line?
a) KCl b) HCOOH c) CH_3NH_2 d) CH_3COOH
- Which is not true for a standard hydrogen electrode?
a) The hydrogen ion concentration is 1M
b) Temperature is 25°C
c) Pressure of hydrogen is 1 atmosphere
d) It contains a metallic conductor which does not adsorb hydrogen
- The laws of electrolysis were proposed by
a) Kohlrausch b) Faraday c) Haber d) Bergius
- The metal that cannot be obtained by electrolysis of the aqueous solution of its salts is :
a) Ag b) Cr c) Cu d) Al
- A certain current liberated 0.504 g of hydrogen in 2 h. How many grams of copper can be liberated by the same current flowing for the same time in a copper sulphate solution?
a) 12.9 g b) 15.9 g c) 31.7 g d) 36.9 g
- If mercury is used as cathode in the electrolysis of aqueous NaCl solution, the ions discharged at cathode are :
a) H^+ b) Na^+ c) OH^- d) Cl^-
- Specific conductivity of a solution
a) Increases with dilution b) Decreases with dilution
c) Remains unchanged with dilution d) Depends on mass of electrolyte
- When an electrolytic solution conducts electricity, current is carried out by :
a) Electrons b) Cations and anions c) Neutral atoms d) None of these
- e.m.f. of a cell in terms of reduction potential of its left and right electrode is :
a) $E = E_L + E_R$ b) $E = E_L - E_R$ c) $E = E_R - E_L$ d) $E = -[E_R + E_L]$
- Which defines the standard reduction electrode potential of Zn^{2+} ions?
a) $\text{Zn}^{2+}(\text{aq}) + 2e \rightarrow \text{Zn}(\text{s}); [\text{Zn}^{2+}] = 1\text{M}$
b) $\text{Zn}(\text{g}) \rightarrow \text{Zn}^{2+} + 2e; [\text{Zn}^{2+}] = 1\text{M}$
c) $\text{Zn}^{2+}(\text{aq}) \rightarrow \text{Zn}(\text{s}) + 2e; [\text{Zn}^{2+}] = 1\text{M}$

- d) $\text{Zn}^{2+}(\text{g}) \rightarrow \text{Zn}(\text{s}) - 2e^-$; $[\text{Zn}^{2+}] = 1M$
12. Given, the data at 25°C ,
 $\text{Ag} + \text{I}^- \rightarrow \text{AgI} + e^-$; $E^\circ = 0.152\text{ V}$
 $\text{Ag} \rightarrow \text{Ag}^+ + e^-$; $E^\circ = -0.800\text{ V}$
 What is the value of $\log K_{\text{sp}}$ for AgI?
 $\left(2.303 \frac{RT}{F} = 0.059\text{ V}\right)$
- a) - 8.12 b) +8.612 c) -37.83 d) -16.13
13. The molar conductivity of HCl, NaCl and CH_3COONa are 425, 188, 96 $\text{S cm}^2 \text{mol}^{-1}$ at 298 K. The molar conductivity of CH_3COOH at the same temperature is $\text{S cm}^2 \text{mol}^{-1}$.
- a) 333 b) 451 c) 325 d) 550
14. In the electrolysis of CuCl_2 solution using Cu electrodes the mass of cathode increases by 3.18 g. What happened at the other electrode?
- a) 0.05 mole of Cu^{2+} ions passed into solution
 b) 0.112 litre of Cl_2 was liberated
 c) 0.56 litre O_2 was liberated
 d) 0.1 mole of Cu^{2+} ions passed into the solution
15. When a quantity of electricity is passed through CuSO_4 solution, 0.16 g of copper gets deposited. If the same quantity of electricity is passed through acidulated water, then the volume of H_2 liberated at STP will be [Given, atomic weight of Cu = 64]
- a) 4.0 cm^3 b) 56 cm^3 c) 604 cm^3 d) 8.0 cm^3
16. Faraday's laws hold good at :
- a) All pressures b) Only at 298 K c) In different solvents d) All of these
17. The standard reduction potentials at 25°C of $\text{Li} + |\text{Li}, \text{Ba}^{2+}|\text{Ba}, \text{Na}^+|\text{Na}$ and $\text{Mg}^{2+}|\text{Mg}$ are - 3.05, - 2.73, - 2.71 and - 2.37 V respectively. Which is strongest reducing agent?
- a) Li b) Ba c) Na d) Mg
18. In which cell, electrical energy is converted into chemical energy?
- a) Water voltameter b) Silver voltameter c) Coulometer d) Either of these
19. Passage of 96500 coulomb of electricity liberateslitre of O_2 at NTP during electrolysis.
- a) 5.6 b) 6.5 c) 22.2 d) 11.2
20. The number of coulombs required for the deposition of 107.870 g silver is
- a) 96500 b) 48250 c) 1 d) 10000