**1.** Which of the following statement is wrong about galvanic cell ?
(1) cathode is positive charged
(2) anode is negatively charged
(3) reduction takes place at the anode
(4) reduction takes place at the cathode

**2.** A standard hydrogen electrode has zero electrode potential because
(1) hydrogen is easier to oxidise
(2) electrode potential is assumed to be zero
(3) hydrogen atom has only one electron
(4) hydrogen is the lightest element.

**3.** A standard reduction electrode potentials of four metals are
A = – 0.250 V , B = – 0.140 V
C = – 0.126 V , D = – 0.402 V
The metal that displaces A from its aqueous solution is :–
(1) B (2) C
(3) D (4) None of the above

**4.** The standard electrode potentials for the reactions
$Ag^+$ (a) + $e^-$ ⟶ Ag(s)
$Sn^{2+}$ (a) + $2e^-$ ⟶ Sn (s)
at 25 °C are 0.80 volt and –0.14 volt, respectively. The standard emf of the cell.
$Sn_{(s)} \mid Sn^{2+}_{(aq)}(1M) \mid\mid Ag^+_{(aq)}(1M) \mid Ag_{(s)}$
is :
(1) 0.66 volt (2) 0.80 volt
(3) 1.08 volt (4) 0.94 volt

**5.** The thermodynamic efficiency of cell is given by-
(1) $\frac{\Delta H}{\Delta G}$ (2) $\frac{nFE_{cell}}{\Delta G}$ (3) $-\frac{nFE_{cell}}{\Delta H}$ (4) Zero

**6.** The reduction potential values are given below:
$Al^{3+} \mid Al$ = –1.67 volt,
$Mg^{2+} \mid Mg$ = –2.34 volt
$Cu^{2+} \mid Cu$ = + 0.34 volt,
$I_2 \mid 2I^-$ = + 0.53 volt
Which one is the best reducing agent ?
(1) Al (2) Mg (3) Cu (4) $I_2$

**7.** $E°(Ni^{2+} \mid Ni)$ = –0.25 volt, $E°(Au^{3+} \mid Au)$ = 1.50 volt. The standard emf of the voltaic cell.
$Ni_{(s)} \mid Ni^{2+}_{(aq)}$ (1.0 M) $\mid\mid Au^{3+}_{(aq)}$ (1.0 M) $\mid Au_{(s)}$ is :
(1) 1.25 volt (2) –1.75 volt
(3) 1.75 volt (4) 4.0 volt

**8.** From the following E° values of half cells,
(i) A + $e \rightarrow A^-$; E° = –0.24 V
(ii) $B^-$ + $e \rightarrow B^{2-}$; E° = +1.25 V
(iii) $C^-$ + $2e \rightarrow C^{3-}$; E° = –1.25 V
(iv) D + $2e \rightarrow D^{2-}$; E° = +0.68 V
What combination of two half cells would result in a cell with the largest potential ?
(1) (ii) and (iii) (2) (ii) and (iv)
(3) (i) and (iii) (4) (i) and (iv)

**9.** Which of the following will increase the voltage of the cell with following cell reaction
$Sn_{(s)} + 2Ag^+_{(aq)} \rightarrow Sn^{+2}_{(aq)} + 2Ag_{(s)}$
(1) Decrease in the concentration of $Ag^+$ ions
(2) Increase in the concentration of $Sn^{+2}$ ions
(3) Increase in the concentration of $Ag^+$ ions
(4) (1) & (2) both

**10.** At 25°C the standard emf of cell having reactions involving two electrons change is found to be 0.295V. The equilibrium constant of the reaction is -
(1) $29.5 \times 10^{-2}$ (2) 10
(3) $10^{10}$ (4) $29.5 \times 10^{10}$

**11.** The emf of the cell in which the following reaction, $Zn(s) + Ni^{2+}_{(aq)}$ (a = 0.1) $\rightarrow Zn^{2+}_{(aq)}$ (a = 1.0) + Ni(s) occurs, is found to be 0.5105 V at 298 K. The standard e.m.f. of the cell is :-
(1) –0.5105 V (2) 0.5400 V
(3) 0.4810 V (4) 0.5696 V

**12.** What is the potential of the cell containing two hydrogen electrodes as represented below
$Pt \mid H_2(g) \mid H^+_{(aq)}(10^{-8}\ M) \mid\mid H^+_{(aq)}(0.001\ M) \mid H_2(g) \mid Pt$
(1) – 0.295 V (2) – 0.0591 V
(3) 0.295 V (4) 0.0591 V

**13.** Consider the cell, $Cu \mid Cu^{+2} \mid\mid Ag^+ \mid Ag$. If the concentration of $Cu^{+2}$ and $Ag^+$ ions becomes ten times the emf of the cell :–
(1) Becomes 10 times
(2) Remains same
(3) Increase by 0.0295 V
(4) Decrease by 0.0295 V

**14.** Given electrode potentials :
$Fe^{3+}_{(aq)} + e^- \longrightarrow Fe^{2+}_{(aq)}$ ; E° = 0.771 volts
$I_{2(g)} + 2e^- \longrightarrow 2I^-_{(aq)}$ ; E° = 0.536 volts
$E°_{cell}$ for the cell reaction,
$2Fe^{3+}_{(aq)} + 2I^-_{(aq)} \longrightarrow 2Fe^{2+}_{(aq)} + I_{2(g)}$ is -
(1) $(2 \times 0.771 - 0.536)$ = 1.006 volts
(2) $(0.771 - 0.5 \times 0.536)$ = 0.503 volts
(3) 0.771 – 0.536 = 0.235 volts
(4) 0.536 – 0.771 = –0.235 volts

**15.** The equilibrium constant for the reaction
$Sr(s) + Mg^{+2}(aq) \rightleftharpoons Sr^{+2}(aq) + Mg(s)$ is $4 \times 10^{12}$ at 25°C
The E° for a cell made up of the $Sr \mid Sr^{+2}$ and $Mg^{+2} \mid Mg$ half cells
(log 2 = 0.3)
(1) 0.3717 V (2) 0.7434 V
(3) 0.1858 V (4) 0.135 V

**16.** Which of the substances Na, Hg, S, Pt and graphite can be used as electrodes in electrolytic cells having aqueous solution ?
(1) Hg and Pt (2) Hg, Pt and graphite
(3) Na, S (4) Na, Hg, S

**17.** The products formed when an aqueous solution of NaBr is electrolyzed in a cell having inert electrodes are :
(1) Na and $Br_2$ (2) Na and $O_2$
(3) $H_2$, $Br_2$ and NaOH (4) $H_2$ and $O_2$

**18.** When an aqueous solution of lithium chloride is electrolysed using graphite electrodes
(1) $Cl_2$ is liberated at the anode.
(2) Li is deposited at the cathode
(3) as the current flows, pH of the solution remains constant
(4) as the current flows, pH of the solution decreases.

**19.** The ratio of weights of hydrogen and magnesium deposited by the same amount of electricity from aqueous $H_2SO_4$ and fused $MgSO_4$ are :
(1) 1 : 8 (2) 1 : 12
(3) 1 : 16 (4) None of these

**20.** The same amount of electricity was passed through two separate electrolytic cells containing solutions of nickel nitrate $[Ni(NO_3)_2]$and chromium nitrate $[Cr(NO_3)_3]$ respectively. If 0.3 g of nickel was deposited in the first cell, the amount of chromium deposited is :
(at. wt. of Ni = 59, at. wt. of Cr = 52)
(1) 0.1 g (2) 0.17 g (3) 0.3 g (4) 0.6 g

**21.** 1 mole of Al is deposited by X coulomb of electricity passing through aluminium nitrate solution. The number of moles of silver deposited by X coulomb of electricity from silver nitrate solution is :
(1) 3 (2) 4 (3) 2 (4) 1

**22.** Calculate the volume of hydrogen at STP obtained by passing a current of 0.536 ampere through acidified water for 30 minutes.
(1) 0.112 litre (2) 0.224 litre
(3) 0.056 litre (4) 0.448 litre

**23.** One mole of electron passes through each of the solution of $AgNO_3$, $CuSO_4$ and $AlCl_3$ when Ag, Cu and Al are deposited at cathode. The molar ratio of Ag, Cu and Al deposited are
(1) 1 : 1 : 1 (2) 6 : 3 : 2
(3) 6 : 3 : 1 (4) 1 : 3 : 6

**24.** The charge required for the oxidation of one mole $Mn_3O_4$ into $MnO_4^{2-}$ in presence of alkaline medium is
(1) $5 \times 96500$ C (2) 96500 C
(3) $10 \times 96500$ C (4) $2 \times 96500$ C

**25.** The resistance of 0.01 N solution of an electrolyte was found to be 200 ohm at 298 K using a conductivity cell of cell constant 1.5 $cm^{-1}$. The equivalent conductance of solution is :–
(1) 750 $mhocm^2\ eq^{-1}$ (2) 75 mho $cm^2\ eq^{-1}$
(3) 750 $mho^{-1}\ cm^2\ eq^{-1}$ (4) 75 $mho^{-1}cm^2\ eq^{-1}$

**26.** If the pressure of $H_2$ gas is increased from 1 atm to 100 atm keeping $H^+$ concentration constant at 1 M, the change in reduction potential of hydrogen half cell at 25°C will be
(1) 0.059 V (2) 0.59 V
(3) 0.0295 V (4) 0.118 V

**27.** Salts of A (atomic weight = 7), B (atomic weight =27) and C (atomic weight = 48) were electrolysed under identical conditions using the same quantity of electricity. It was found that when 2.1 g of A was deposited, the weights of B and C deposited were 2.7 and 7.2 g. The valencies of A, B and C respectively are
(1) 3, 1 and 2 (2) 1, 3 and 2
(3) 3, 1 and 3 (4) 2, 3 and 2

**28.** The cost of electricity required to deposit 1 g of Mg is Rs. 5.00. How much would it cost to deposit 9 g of Al (At wt. Al = 27, Mg = 24)
(1) Rs. 10 (2) Rs. 27
(3) Rs. 40 (4) Rs. 60

**29.** The resistance of 0.5 M solution of an electrolyte in a cell was found to be 50 Ω. If the electrodes in the cell are 2.2 cm apart and have an area of 4.4 $cm^2$ then the molar conductivity (in S $m^2\ mol^{-1}$) of the solution is
(1) 0.2 (2) 0.02
(3) 0.002 (4) None of these

**30.** Equivalent conductance of 0.1 M HA(weak acid) solution is 10 $Scm^2 equivalent^{-1}$ and that at infinite dilution is 200 $Scm^2 equivalent^{-1}$ Hence pH of HA solution is
(1) 1.3 (2) 1.7 (3) 2.3 (4) 3.7

**ANSWER KEY** Exercise-1

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

## PREVIOUS YEARS' QUESTIONS EXERCISE-II

**1.** A gas X at 1 atm is bubbled through a solution containing a mixture of 1 M Y and 1 M Z at 25°C. If the reduction potential of Z > Y > X, then **[JEE 1999]**

(1) Y will oxidise X and not Z
(2) Y will oxidise Z and X
(3) Y will oxidise both X and Z
(4) Y will reduce both X and Z.

**2.** For the electrochemical cell, M | $M^+$ | | $X^-$ | X, $E°(M^+|M) = 0.44$ V and $E°(X|X^-) = 0.33$V. From this data , one can deduce that **[JEE 2000]**

(1) $M + X \longrightarrow M^+ + X^-$ is the spontaneous reaction
(2) $M^+ + X^- \longrightarrow M + X$ is the spontaneous reaction
(3) $E_{cell}$= 0.77 V
(4) $E_{cell}$= –0.77 V

**3.** Saturated solution of $KNO_3$ is used to make salt bridge because **[JEE 2001]**

(1) velocity of $K^+$ is greater than that of $NO_3^-$
(2) velocity of $NO_3^-$ is greater than that of $K^+$
(3) velocities of both $K^+$ and $NO_3^-$ are nearly the same
(4) $KNO_3$ is highly soluble in water

**4.** In the electrolytic cell, flow of electrons is from: **[JEE 2003]**

(1) Cathode to anode in solution
(2) Cathode to anode through external supply
(3) Cathode to anode through internal supply
(4) Anode to cathode through internal supply.

**5.** Find the equilibrium constant at 298 K for the reaction,

$Cu^{2+}(aq) + In^{2+}(aq) \rightleftharpoons Cu^{+}(aq) + In^{3+}(aq)$

Given that

$E^{\circ}_{Cu^{2+}|Cu^{+}} = 0.15V$, $E^{\circ}_{In^{3+}|In^{+}} = -0.42V$,

$E^{\circ}_{In^{2+}|In^{+}} = -0.40V$ **[JEE 2004]**

(1) $10^4$ (2) $10^6$ (3) $10^8$ (4) $10^{10}$

6. $Zn | Zn^{2+}$ (a = 0.1M) | | $Fe^{2+}$ (a = 0.01M) | Fe. The emf of the above cell is 0.2905 V. Equilibrium constant for the cell reaction is **[JEE 2004]**

(1) $10^{0.32|0.0591}$ (2) $10^{0.32|0.0295}$
(3) $10^{0.26|0.0295}$ (4) $e^{0.32|0.295}$

**7.** The half cell reactions for rusting of iron are:

$2H^+ + \frac{1}{2}O_2 + 2e^- \longrightarrow H_2O$; $E^0 = +1.23$ V,

$Fe^{2+} + 2e^- \longrightarrow Fe$; $E^0 = -0.44$ V

$\Delta G^0$ (in kJ) for the reaction is: **[JEE 2005]**

(1) –76 (2) –322 (3) –122 (4) –176

**8.** The molar conductivities, $\Lambda^0_{NaOAc}$ and $\Lambda^0_{HCl}$ at infinite dilution in water at 25°C are 91.0 and 426.2 S $cm^2$ | mol respectively. To calculate $\Lambda^0_{HOAc}$ the additional value required is : **[AIEEE 2006]**

(1) KCl (2) NaOH (3) NaCl (4) $H_2O$

9. Resistance of a conductivity cell filled with a solution of an electrolyte of concentration 0.1M is 100Ω. The conductivity of this solution is 1.29 $Sm^{-1}$. Resistance of the same cell when filled with 0.02M of the same solution is 520Ω. The molar conductivity of 0.02M solution of the electrolyte will be. **[AIEEE 2006]**

(1) $124 \times 10^{-4}$ $Sm^2$ $mol^{-1}$
(2) $1240 \times 10^{-4}$ $Sm^2$ $mol^{-1}$
(3) $1.24 \times 10^4$ $Sm^2$ $mol^{-1}$
(4) $12.4 \times 10^{-4}$ $Sm^2$ $mol^{-1}$

**10.** Given the data at 25°C,

$Ag_{(s)} + I^-_{(aq)} \rightarrow AgI_{(s)} + e^-$, E° = 0.152V

$Ag_{(s)} \rightarrow Ag^+_{(aq)} + e^-$, E° = – 0.800 V

What is the value of log $K_{sp}$ for AgI ?
(Where $K_{sp}$= solubility product)

$\left(2.303\frac{RT}{F} = 0.059V\right)$ **[AIEEE 2006]**

(1) –8.12 (2) +8.612 (3) –37.83 (4) –16.13

**Paragraph for Questions 11 to 12**

The concentration of potassium ions inside a biological cell is at least twenty times higher than the outside. The resulting potential difference across the cell is important in several processes such as transmission of nerve impulses and maintaining the ion balance. A simple model for such a concentration cell involving a metal M is :

M(s) | $M^+$(aq ; 0.05 molar) || $M^+$(aq ; 1 molar) | M(s)

For the above electrolytic cell the magnitude of the cell potential | $E_{cell}$ | = 70 mV. **[JEE 2010]**

**11.** For the above cell :-

(1) $E_{cell} < 0$ ; $\Delta G > 0$ (2) $E_{cell} > 0$ ; $\Delta G < 0$
(3) $E_{cell} < 0$ ; $\Delta G^0 > 0$ (4) $E_{cell} > 0$ ; $\Delta G^0 < 0$

**12.** If the 0.05 molar solution of $M^+$ is replaced by a 0.0025 molar $M^+$ solution, then the magnitude of the cell potential would be :-

(1) 35 mV (2) 70 mV
(3) 140 mV (4) 700 mV

**13.** Resistance of 0.2 M solution of an electrolyte is 50 Ω. The specific conductance of the solution is 1.3 S $m^{-1}$. If resistance of the 0.4M solution of the same electrolyte is 260 Ω, its molar conductivity is:-

**[AIEEE 2011]**

(1) 6250 S $m^2$ $mol^{-1}$

(2) $6.25 \times 10^{-4}$ S $m^2$ $mol^{-1}$

(3) $625 \times 10^{-4}$ S $m^2$ $mol^{-1}$

(4) 62.5 S $m^2$ $mol^{-1}$

**14.** The reduction potential of hydrogen half-cell will be negative if :- **[AIEEE 2011]**

(1) $p(H_2)$ = 2 atm $[H^+]$ = 1.0 M

(2) $p(H_2)$ = 2 atm and $[H^+]$ = 2.0 M

(3) $p(H_2)$ = 1 atm and $[H^+]$ = 2.0 M

(4) $p(H_2)$ = 1 atm and $[H^+]$ = 1.0 M

**15.** Consider the following cell reaction :

$2Fe_{(s)}+O_{2(g)}+4H^+_{(aq)} \rightarrow 2Fe^{2+}_{(a)}+2H_2O(\ell)$ $E^\circ = 1.67$ V

At $[Fe^{2+}] = 10^{-3}$ M, $P(O_2)$ = 0.1 atm and pH = 3, the cell potential at 25°C is - **[JEE 2011]**

(1) 1.47 V (2) 1.77 V

(3) 1.87 V (4) 1.57 V

**16.** The standard reduction potentials for $Zn^{2+}$ | Zn, $Ni^{2+}$ | Ni and $Fe^{2+}$ | Fe are − 0.76, − 0.23 and − 0.44 V respectively. The reaction $X + Y^{+2} \rightarrow X^{2+} + Y$ will be spontaneous when **[AIEEE 2012]**

(1) X = Zn, Y = Ni (2) X = Ni, Y = Fe

(3) X = Ni, Y = Zn (4) X = Fe, Y = Zn

**17.** Given : **[JEE-MAINS 2013]**

$E^0_{Cr^{3+}/Cr} = -0.74\,V$ ; $E^0_{MnO_4^-/Mn^{2+}} = 1.51$ V

$E^0_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33$ V ; $E^0_{Cl/Cl^-} = 1.36$ V

Based on the data given above, strongest oxidising agent will be :

(1) $Cl^-$ (2) $Cr^{3+}$ (3) $Mn^{2+}$ (4) $MnO_4^-$

**18.** Resistance of 0.2 M solution of an electrolyte is 50 Ω. The specific conductance of the solution is 1.4 S $m^{-1}$. The resistance of 0.5 M solution of the same electrolyte is 280 Ω. The molar conductivity of 0.5 M solution of the electrolyte in S $m^2$ $mol^{-1}$ is : **[JEE-MAINS 2014]**

(1) $5 \times 10^3$ (2) $5 \times 10^2$

(3) $5 \times 10^{-4}$ (4) $5 \times 10^{-3}$

**19.** At 298 K, the standard reduction potentials are 1.51 V for $MnO_4^-$ | $Mn^{2+}$, 1.36 V for $Cl_2$ | $Cl^-$, 1.07 V for $Br_2$ | $Br^-$, and 0.54 V for $I_2$ | $I^-$ . At pH = 3, permanganate is expected to oxidize $\left(\frac{RT}{F} = 0.059\,V\right)$:- **[JEE-MAINS (ONLINE) 2015]**

(1) $Cl^-$ and $Br^-$ (2) $Cl^-$, $Br^-$ and $I^-$

(3) $Br^-$ and $I^-$ (4) $I^-$ only

**20.** A variable, opposite external potential ($E_{ext}$) is applied to the cell

Zn | $Zn^{2+}$ (1 M) | | $Cu^{2+}$ (1 M) | Cu, of potential 1.1 V. When $E_{ext}$ < 1.1 V and $E_{ext}$ > 1.1 V, respectively electrons flow from :

**[JEE-MAINS (ONLINE) 2015]**

(1) anode to cathode in both cases

(2) anode to cathode and cathode to anode

(3) cathode to anode in both cases

(4) cathode to anode and anode to cathode

**21.** What will occur if a block of copper metal is dropped into a beaker containing a solution of 1M $ZnSO_4$ **[JEE-MAINS (ONLINE) 2016]**

(1) The copper metal will dissolve and zinc metal will be deposited

(2) No reaction will occur

(3) The copper metal will dissolve with evolution of oxygen gas

(4) The copper metal will dissolve with evolution of hydrogen gas

**22.** Oxidation of succinate ion produces ethylene and carbon dioxide gases. On passing 0.2 Faraday electricity through on aqueous solution of potassium succinate, the total volume of gases (at both cathode and anode) at STP (1 atm and 273 K) is :

**[JEE-MAINS (ONLINE) 2016]**

(1) 8.96 L (2) 2.24 L

(3) 4.48 L (4) 6.72 L

**23.** For the following electrochemical cell at 298K,

Pt(s) | $H_2$(g, 1bar) | $H^+$(aq, 1M) | | $M^{4+}$(a), $M^{2+}$(a) | Pt(s)

$E_{cell}$ = 0.092 V when $\frac{[M^{2+}(aq.)]}{[M^{4+}(aq.)]} = 10^x$

Given : $E^0_{M^{4+}/M^{2+}} = 0.151$V ; $2.303\,\frac{RT}{F} = 0.059$V

The value of x is - **[JEE-Adv. 2016]**

(1) −2 (2) −1 (3) 1 (4) 2

**24.** Given **[JEE-MAINS - 2017]**

$E^{o}_{Cl_2/Cl^-} = 1.36\,V, E^{o}_{Cr^{3+}/Cr} = -0.74\,V$

$E^{o}_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33\,V, E^{o}_{MnO_4^-/Mn^{2+}} = 1.51\,V$ .

Among the following, the strongest reducing agent is

(1) Cr (2) $Mn^{2+}$ (3) $Cr^{3+}$ (4) $Cl^-$

**25.** What is the standard reduction potential ($E^o$) for $Fe^{3+} \rightarrow Fe$ ? **[JEE-MAINS (ONLINE) 2017]**

Given that :

$Fe^{2+} + 2e^- \rightarrow Fe$ ; $E^{o}_{Fe^{2+}/Fe} = -0.47$ V

$Fe^{3+} + e^- \rightarrow Fe^{2+}$ ; $E^{o}_{Fe^{3+}/Fe^{2+}} = +0.77$ V

(1) +0.30 V (2) +0.057 V

(3) –0.057 V (4) –0.30 V

**26.** To find the standard potential of $M^{3+}$ | M electrode, the following cell is constituted:

Pt | M | $M^{3+}$(0.001 mol $L^{-1}$) | $Ag^+$(0.01 mol $L^{-1}$) | Ag

The emf of the cell is found to be 0.421 volt at 298 K. The standard potential of half reaction $M^{3+} + 3e^- \rightarrow M$ at 298 K will be:

**[JEE-MAINS (ONLINE) 2017]**

(Given $E^{\ominus}_{Ag^+/Ag}$ at 298 K = 0.80 Volt)

(1) +0.30 V (2) +0.057 V

(3) –0.057 V (4) –0.30 V

**27.** How long (approximate) should water be electrolysed by passing through 100 amperes current so that the oxygen released can completely burn 27.66 g of diborane ?

**[JEE-MAINS (OFFLINE) 2017]**

(Atomic weight of B = 10.8 u)

(1) 0.8 hours (2) 3.2 hours

(3) 1.6 hours (4) 6.4 hours

**28.** For the following cell : **[JEE-Adv. 2017]**

Zn(s) | $ZnSO_4$ (aq.) | | $CuSO_4$ (aq.) | Cu(s)

when the concentration of $Zn^{2+}$ is 10 times the concentration of $Cu^{2+}$ , the expression for $\Delta G$ ( in J $mol^{-1}$) is

[F is Faraday constant , R is gas constant, T is temperature , E°(cell) = 1.1V]

(1) 2.303 RT + 1.1F (2) 2.303 RT – 2.2F

(3) 1.1 F (4) –2.2 F

**29** When an electric current is passed through acidified water, 112 mL of hydrogen gas at N.T.P. was collected at the catode in 965 seconds. The current passed, in ampere, is : **[JEE-MAINS (ONLINE) 2018]**

(1) 2.0 (2) 1.0

(3) 0.1 (4) 0.5

**30.** When 9.65 ampere current was passed for 1.0 hour into nitrobenzene in acidic medium, the amount of p-aminophenol produced is :-

**[JEE-MAINS (ONLINE) 2018]**

(1) 10.9 g (2) 98.1 g

(3) 109.0 g (4) 9.81 g

| PREVIOUS YEARS QUESTIONS | | | | ANSWER KEY | | | | | | Exercise-II |
|---|---|---|---|---|---|---|---|---|---|---|
| **Que.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **Ans.** | **1** | **2** | **3** | **3** | **4** | **2** | **2** | **3** | **1** | **4** |
| **Que.** | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| **Ans.** | **2** | **3** | **2** | **1** | **4** | **1** | **4** | **4** | **3** | **2** |
| **Que.** | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| **Ans.** | **2** | **1** | **4** | **1** | **3** | **2** | **2** | **2** | **2** | **4** |