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CHEMISTRY · JEE MAIN

Electrochemistry

Chapter-wise previous year questions, with answer key

128	2020–2025	10
PYQS	PAPERS	TOPICS

Electrochemical Cells · Nernst Equation · Electrolysis · Corrosion · Electrolysis and Faraday's Laws · Conductance and Conductivity · Batteries and Fuel Cells · Kohlrausch's Law · Standard Electrode Potential · Galvanic Cells

1. Attempt each question on paper first — they're grouped by topic, newest papers first.
2. Check yourself against the answer key at the end.
3. Got one wrong? Tap “Step-by-step solution” under it for the full working.

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Electrochemical Cells · 7 PYQs

Q1 JEE Main 2024 · 6 Apr · Shift 2

How can an electrochemical cell be converted into an electrolytic cell ?

(A) Applying an external opposite potential greater than E^0_{cell}

(B) Exchanging the electrodes at anode and cathode.

(C) Applying an external opposite potential lower than $E^0{}_{cell}$

(D) Reversing the flow of ions in salt bridge.

Step-by-step solution ▸ prepwiser.in/questions/52yAEcZpgA

Q2 JEE Main 2024 · 5 Apr · Shift 2

For the electro chemical cell

$M\left|M^{2+}\right||X|X^{2-}$

If $E^0_{(M^{2+}/M)} = 0.46V$ and $E^0_{(x/x^{2-})} = 0.34V$.

Which of the following is correct?

(A) $E_{cell} = 0.80V$

(B) $M + X \rightarrow M^{2+} + X^{2-}$ is a spontaneous reaction

(C) $E_{cell} = -0.80V$

(D) $M^{2+} + X^{2-} \rightarrow M + X$ is a spontaneous reaction

Step-by-step solution ▸ prepwiser.in/questions/nKfLK66gWV

Q3 JEE Main 2024 · 4 Apr · Shift 1

One of the commonly used electrode is calomel electrode. Under which of the following categories, calomel electrode comes?

(A) Metal ion - Metal electrodes

(B) Oxidation - Reduction electrodes

(C) Metal - Insoluble Salt - Anion electrodes

(D) Gas - Ion electrodes

Step-by-step solution ▸ prepwiser.in/questions/Z4IUwhvaux

Q4 JEE Main 2023 · 11 Apr · Shift 2

The number of correct statements from the following is _____

A. E_{cell} is an intensive parameter

B. A negative $E^{\ominus}$ means that the redox couple is a stronger reducing agent than the H^+/H_2 couple.

C. The amount of electricity required for oxidation or reduction depends on the stoichiometry of the electrode reaction.

D. The amount of chemical reaction which occurs at any electrode during electrolysis by a current is proportional to the quantity of electricity passed through the electrolyte.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Mi43KHfWiz

Q5 JEE Main 2023 · 8 Apr · Shift 2

The number of incorrect statements from the following is _____.

A. The electrical work that a reaction can perform at constant pressure and temperature is equal to the reaction Gibbs energy.

B. $\mathrm{E}^{\circ}_{\mathrm{cell}}$ cell is dependent on the pressure.

C.

$$\frac{dE^{\theta}\ \mathrm{cell}}{\mathrm{dT}} = \frac{\Delta_{\mathrm{r}}\mathrm{S}^{\theta}}{\mathrm{nF}}$$

D. A cell is operating reversibly if the cell potential is exactly balanced by an opposing source of potential difference.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/AZ7UZ398RZ

Q6 JEE Main 2021 · 31 Aug · Shift 1

Consider the following cell reaction :

$$Cd_{(s)} + Hg_2SO_{4(s)} + \frac{9}{5}H_2O_{(l)} \rightleftharpoons CdSO_4.\frac{9}{5}H_2O_{(s)} + 2Hg_{(l)}$$

The value of E^0_{cell} is 4.315 V at 25°C. If $\Delta H^{\circ} = -825.2$ kJ mol^{-1}, the standard entropy change ΔS° in J K^{-1} is _____. (Nearest integer) [Given : Faraday constant = 96487 C mol^{-1}]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/zreZsxWxEf

Q7 JEE Main 2020 · 6 Sep · Shift 2

For the given cell :

Cu(s) | Cu^{2+}(C_1M) || Cu^{2+}(C_2M) | Cu(s)

change in Gibbs energy (ΔG) is negative, if :

(A) $C_2 = \sqrt{2}C_1$

(B) $C_2 = \frac{C_1}{\sqrt{2}}$

(C) $C_1 = 2C_2$

(D) $C_1 = C_2$

Step-by-step solution ▸ prepwiser.in/questions/P-u8YAUJXM

Nernst Equation · 35 PYQs

Q8 JEE Main 2025 · 8 Apr · Shift 2

Consider the following half cell reaction

$$\mathrm{Cr_2O_7^{2-}\,(aq) + 6e^- + 14H^+\,(aq) \rightarrow 2Cr^{3+}\,(aq) + 7H_2O\,(\ell)}$$

The reaction was conducted with the ratio of $\frac{[Cr^{3+}]^2}{[Cr_2O_7^{2-}]} = 10^{-6}$. The pH value at which the EMF of the half cell will become zero is _____.

(nearest integer value)

[Given: standard half cell reduction potential

$$E^{\circ}_{Cr_2O_7^{2-},H^+/Cr^{3+}} = 1.33\ V$$

, $\frac{2.303RT}{F} = 0.059\ V$.]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/QLc7SEJMjE

Q9 JEE Main 2025 · 29 Jan · Shift 1

For a Mg | Mg^{2+} (aq) || Ag^+ (aq) | Ag the correct Nernst Equation is :

(A) $E_{cell} = E^{o}_{cell} - \frac{RT}{2F}\ln\frac{[Ag^+]^2}{[Mg^{2+}]}$

(B) $E_{cell} = E^{o}_{cell} - \frac{RT}{2F}\ln\frac{[Mg^{2+}]}{[Ag^+]}$

(C) $E_{cell} = E^{o}_{cell} - \frac{RT}{2F}\ln\frac{[Ag^+]}{[Mg^{2+}]}$

(D) $E_{cell} = E^{o}_{cell} + \frac{RT}{2F}\ln\frac{[Ag^+]^2}{[Mg^{2+}]}$

Step-by-step solution ▸ prepwiser.in/questions/cnZO2T3b3w

Q10 JEE Main 2024 · 8 Apr · Shift 2

The emf of cell

$$\mathrm{Tl}\left|\underset{(0.001M)}{Tl^+}\right|\left|\underset{(0.01M)}{Cu^{2+}}\right|\mathrm{Cu}$$

is $0.83V$ at $298K$. It could be increased by :

(A) increasing concentration of Tl^+ ions

(B) increasing concentration of Cu^{2+} ions

(C) increasing concentration of both Tl^+ and Cu^{2+} ions

(D) decreasing concentration of both Tl^+ and Cu^{2+} ions

Step-by-step solution ▸ prepwiser.in/questions/B1q_ABGBcX

Q11 JEE Main 2024 · 4 Apr · Shift 1

What pressure (bar) of H_2 would be required to make emf of hydrogen electrode zero in pure water at $25^{\circ}C$?

(A) 0.5

(B) 10^{-14}

(C) 1

(D) 10^{-7}

Step-by-step solution ▸ prepwiser.in/questions/wb11WDv9qF

Q12 JEE Main 2024 · 1 Feb · Shift 1

The potential for the given half cell at $298\mathrm{K}$ is (-) _____ $\times 10^{-2}\mathrm{V}$

$$2\mathrm{H}^{+}_{(\mathrm{aq})} + 2\mathrm{e}^{-} \longrightarrow \mathrm{H}_2(\mathrm{g})$$

$$\left[\mathrm{H}^{+}\right] = 1\mathrm{M}, \mathrm{P}_{\mathrm{H}_2} = 2\mathrm{atm}$$

(Given : $2.303\mathrm{RT}/\mathrm{F} = 0.06\mathrm{V}, \log 2 = 0.3$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/RgoM4jnoCm

Q13 JEE Main 2024 · 27 Jan · Shift 2

The hydrogen electrode is dipped in a solution of $\mathrm{pH} = 3$ at $25^{\circ}\mathrm{C}$. The potential of the electrode will be _____ $\times 10^{-2}\mathrm{V}$.

$\left(\frac{2.303\mathrm{RT}}{\mathrm{F}} = 0.059\mathrm{V}\right)$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/30DmZ0u03d

Q14 JEE Main 2023 · 13 Apr · Shift 2

At $298\mathrm{K}$, the standard reduction potential for $\mathrm{Cu}^{2+}/\mathrm{Cu}$ electrode is $0.34\mathrm{V}$.

Given : $\mathrm{K}_{\mathrm{sp}}\mathrm{Cu(OH)}_2 = 1 \times 10^{-20}$

Take $\frac{2.303\mathrm{RT}}{\mathrm{F}} = 0.059\mathrm{V}$

The reduction potential at $\mathrm{pH} = 14$ for the above couple is $(-)x \times 10^{-2}\mathrm{V}$. The value of x is _____

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/gGElHb5Efh

Q15 JEE Main 2023 · 1 Feb · Shift 1

At what pH, given half cell $\mathrm{MnO}_4^{-}(0.1\mathrm{M})|\mathrm{Mn}^{2+}(0.001\mathrm{M})$ will have electrode potential of 1.282 V? _____ (Nearest Integer)

Given

$$\mathrm{E}^{\mathrm{o}}_{\mathrm{MnO}_4^{-}|\mathrm{Mn}^{2+}} = 1.54\mathrm{V}, \frac{2.303\mathrm{RT}}{\mathrm{F}} = 0.059\mathrm{V}$$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/bpqo94eMmh

Q16 JEE Main 2023 · 31 Jan · Shift 1

The logarithm of equilibrium constant for the reaction $Pd^{2+} + 4Cl^- \rightleftharpoons PdCl_4^{2-}$ is _____ (Nearest integer)

Given : $\frac{2.303RT}{F} = 0.06V$

$$Pd^{2+}_{(aq)} + 2e^- \rightleftharpoons Pd(s) \quad E^{\ominus} = 0.83V$$

$$PdCl_4^{2-}(aq) + 2e^- \rightleftharpoons Pd(s) + 4Cl^-(aq) E^{\ominus} = 0.65V$$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/1RFbeM-Mkj

Q17 JEE Main 2023 · 30 Jan · Shift 2

The electrode potential of the following half cell at $298K$

$X\left|X^{2+}(0.001M)\right|\left|Y^{2+}(0.01M)\right|Y$ is _____ $\times 10^{-2}V$ (Nearest integer)

Given: $E^0_{X^{2+}|X} = -2.36V$

$E^0_{Y^{2+}|Y} = +0.36V$

$\frac{2.303RT}{F} = 0.06V$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/uMhygpgYo-

Q18 JEE Main 2023 · 30 Jan · Shift 1

Consider the cell

$$Pt_{(s)}\left|H_2(g, 1atm)\right|H^+(aq, 1M)||Fe^{3+}(aq), Fe^{2+}(aq) \mid Pt(s)$$

When the potential of the cell is $0.712V$ at $298K$, the ratio $\left[Fe^{2+}\right] / \left[Fe^{3+}\right]$ is _____. (Nearest integer)

Given :

$$Fe^{3+} + e^- = Fe^{2+}, E^{\theta}Fe^{3+}, Fe^{2+} \mid Pt = 0.771$$

$\frac{2.303RT}{F} = 0.06V$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/l6buQSU39w

Q19 JEE Main 2023 · 29 Jan · Shift 2

The equilibrium constant for the reaction
$Zn(s) + Sn^{2+}(aq) \rightleftharpoons Zn^{2+}(aq) + Sn(s)$ is 1×10^{20} at 298 K. The magnitude of standard electrode potential of Sn/Sn^{2+} if $E^{\Theta}_{Zn^{2+}/Zn} = -0.76V$ is _____ $\times 10^{-2}$ V. (Nearest integer)

Given : $\frac{2.303RT}{F} = 0.059V$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/FOQpyX2d8Z

Q20 JEE Main 2023 · 25 Jan · Shift 1

Consider the cell

$$\mathrm{Pt(s)|H_2(g)\,(1\,atm)|H^+\,(aq,[H^+]=1)||Fe^{3+}(aq),Fe^{2+}(aq)|Pt(s)}$$

Given $\mathrm{E^o_{Fe^{3+}/Fe^{2+}} = 0.771\,V}$ and $\mathrm{E^o_{H^+/1/2\,H_2} = 0\,V,\ T = 298\,K}$

If the potential of the cell is 0.712 V, the ratio of concentration of Fe^{2+} to Fe^{3+} is _____ (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/mprBZ7G0Tt

Q21 JEE Main 2023 · 25 Jan · Shift 2

$Pt(s)|H_2(g)(1\,bar)|H^+(aq)(1\,M)||M^{3+}(aq),M^+(aq)|Pt(s)$

The $\mathrm{E_{cell}}$ for the given cell is 0.1115 V at 298 K when

$$\frac{[M^+(aq)]}{[M^{3+}(aq)]} = 10^a$$

The value of a is _____

Given : $\mathrm{E^{\theta}_{M^{3+}/M^+}} = 0.2$ V

$\frac{2.303RT}{F} = 0.059V$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Bvd87iCrpP

Q22 JEE Main 2023 · 24 Jan · Shift 1

At 298 K, a 1 litre solution containing 10 mmol of $\mathrm{Cr_2O_7^{2-}}$ and 100 mmol of $\mathrm{Cr^{3+}}$ shows a pH of 3.0.

Given : $\mathrm{Cr_2O_7^{2-} \rightarrow Cr^{3+}}$; $\mathrm{E^{\circ} = 1.330V}$

and $\frac{2.303\,RT}{F} = 0.059$ V

The potential for the half cell reaction is $x \times 10^{-3}$ V. The value of x is _____

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/tNso5cPY5N

Q23 JEE Main 2022 · 29 Jul · Shift 2

For a cell,

$$\mathrm{Cu(s)\,|Cu^{2+}(0.001\,M)||Ag^+(0.01\,M)|\,Ag(s)}$$

the cell potential is found to be $0.43\mathrm{V}$ at $298\mathrm{K}$. The magnitude of standard electrode potential for $\mathrm{Cu^{2+}/Cu}$ is _____ $\times 10^{-2}\mathrm{V}$.

[Given : $E^{\Theta}_{Ag^+/Ag}$ = 0.80 V and $\frac{2.303RT}{F}$ = 0.06 V]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/F2U0VeVpqU

Q24 JEE Main 2022 · 25 Jul · Shift 1

The cell potential for

$$\mathrm{Zn}\left|\mathrm{Zn}^{2+}(\mathrm{aq})\right|\left|\mathrm{Sn}^{x+}\right|\mathrm{Sn}$$

is $0.801\mathrm{V}$ at $298\mathrm{K}$. The reaction quotient for the above reaction is 10^{-2}. The number of electrons involved in the given electrochemical cell reaction is _____.

(Given

$$: \mathrm{E}^{\mathrm{o}}_{\mathrm{Zn}^{2+}|\mathrm{Zn}} = -0.763\mathrm{V}, \mathrm{E}^{\mathrm{o}}_{\mathrm{Sn}^{x+}|\mathrm{Sn}} = +0.008\mathrm{V}$$

and $\frac{2.303\mathrm{RT}}{\mathrm{F}} = 0.06\mathrm{V}$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/wvqmH-sK8o

Q25 JEE Main 2022 · 30 Jun · Shift 1

In which of the following half cells, electrochemical reaction is pH dependent?

(A) $Pt\,|\,Fe^{3+},\,Fe^{2+}$

(B) $MnO_4^-\,|Mn^{2+}$

(C) $Ag\,|\,AgCl\,|Cl^{-1}$

(D) $\frac{1}{2}F_2\,|F^-$

Step-by-step solution ▸ prepwiser.in/questions/mvVeCndgkJ

Q26 JEE Main 2022 · 29 Jun · Shift 2

The cell potential for the given cell at 298 K

Pt| H_2 (g, 1 bar) | H^+ (aq) || Cu^{2+} (aq) | Cu(s)

is 0.31 V. The pH of the acidic solution is found to be 3, whereas the concentration of Cu^{2+} is 10^{-x} M. The value of x is _____.

(Given : $E^{\Theta}_{Cu^{2+}/Cu}$ = 0.34 V and $\frac{2.303\,RT}{F}$ = 0.06 V)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/eICKV2iJNU

Q27 JEE Main 2022 · 26 Jun · Shift 2

Cu(s) + Sn^{2+} (0.001M) $\rightarrow$ Cu^{2+} (0.01M) + Sn(s)

The Gibbs free energy change for the above reaction at 298 K is x $\times$ 10^{-1} kJ mol^{-1}. The value of x is _____. [nearest integer]

[Given : $E^{\Theta}_{Cu^{2+}/Cu} = 0.34\,V$; $E^{\Theta}_{Sn^{2+}/Sn} = -0.14\,V$; F = 96500 C mol^{-1}]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/NK5UfouXAf

Q28 JEE Main 2022 · 26 Jun · Shift 1

The $\left(\frac{\partial E}{\partial T}\right)_P$ of different types of half cells are as follows:

A	B	C	D
1×10^{-4}	2×10^{-4}	0.1×10^{-4}	0.2×10^{-4}

(Where E is the electromotive force)

Which of the above half cells would be preferred to be used as reference electrode?

(A) A **(B)** B

(C) C **(D)** D

Step-by-step solution ▸ prepwiser.in/questions/dHmlYdGGdB

Q29 JEE Main 2022 · 24 Jun · Shift 1

The cell potential for the following cell

Pt $|H_2(g)|H^+(aq)||$ Cu^{2+} (0.01 M)$|$Cu(s)

is 0.576 V at 298 K. The pH of the solution is _____. (Nearest integer)

(Given : $E^o_{Cu^{2+}/Cu} = 0.34$ V and $\frac{2.303\,RT}{F} = 0.06$ V)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/cxxHaqp27A

Q30 JEE Main 2021 · 26 Aug · Shift 2

For the galvanic cell,

Zn(s) + Cu^{2+} (0.02 M) $\rightarrow$ Zn^{2+} (0.04 M) + Cu(s),

E_{cell} = _____ $\times 10^{-2}$ V. (Nearest integer)

[Use : $E^0_{Cu/Cu^{2+}}$ = − 0.34 V, $E^0_{Zn/Zn^{2+}}$ = + 0.76 V, $\frac{2.303RT}{F} = 0.059\,V$]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/iOCXmsrp0c

Q31 JEE Main 2021 · 27 Jul · Shift 2

For the cell

Cu(s) | Cu^{2+} (aq) (0.1 M) || Ag^{+}(aq) (0.01 M) | Ag(s)

the cell potential E_1 = 0.3095 V

For the cell

Cu(s) | Cu^{2+} (aq) (0.01 M) || Ag^{+}(aq) (0.001 M) | Ag(s)

the cell potential = _____ $\times 10^{-2}$ V. (Round off the nearest integer).

[Use : $\frac{2.303RT}{F}$ = 0.059]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/mkxgdDJzlY

Q32 JEE Main 2021 · 25 Jul · Shift 1

Consider the cell at 25°C

Zn | Zn^{2+} (aq), (1M) || Fe^{3+} (aq), Fe^{2+} (aq) | Pt(s)

The fraction of total iron present as Fe^{3+} ion at the cell potential of 1.500 V is x $\times 10^{-2}$. The value of x is _____. (Nearest integer)

(Given : $E^0_{Fe^{3+}/Fe^{2+}} = 0.77V$, $E^0_{Zn^{2+}/Zn} = -0.76V$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/kb2PsYg1he

Q33 JEE Main 2021 · 22 Jul · Shift 2

Assume a cell with the following reaction

$$Cu_{(s)} + 2Ag^{+}(1 \times 10^{-3}M) \rightarrow Cu^{2+}(0.250M) + 2Ag_{(s)}$$

$E^{\Theta}_{cell} = 2.97$ V

E_{cell} for the above reaction is _____ V. (Nearest integer)

[Given : log 2.5 = 0.3979, T = 298 K]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/eU0yS3In6o

Q34 JEE Main 2021 · 26 Feb · Shift 2

Emf of the following cell at 298K in V is x $\times$ 10^{-2}.

Zn|Zn^{2+}(0.1 M)||Ag^{+} (0.01 M)|Ag

The value of x is _____. (Rounded off to the nearest integer)

[Given :

$$E^{\theta}_{Zn^{2+}/Zn} = -0.76V; E^{\theta}_{Ag^{2+}/Ag} = +0.80V; \frac{2.303RT}{F} = 0.059$$

]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/qePSDxgpz4

Q35 JEE Main 2021 · 25 Feb · Shift 2

Copper reduces NO_3^- into NO and NO_2 depending upon the concentration of HNO_3 in solution. (Assuming fixed [Cu^{2+}] and $P_{NO} = P_{NO_2}$), the HNO_3 concentration at which the thermodynamic tendency for reduction of NO_3^- into NO and NO_2 by copper is same is 10^x M. The value of 2x is _____. (Rounded off to the nearest integer)

[Given, $E^o_{Cu^{2+}/Cu} = 0.34$ V, $E^o_{NO_3^-/NO} = 0.96$ V, $E^o_{NO_3^-/NO_2} = 0.79$ V and at 298 K, $\frac{RT}{F}(2.303) = 0.059$]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/h7SMshbYkP

Q36 JEE Main 2021 · 24 Feb · Shift 2

The magnitude of the change in oxidising power of the MnO_4^-/Mn^{2+} couple is x $\times$ 10^{-4} V, if the H^+ concentration is decreased from 1M to 10^{-4} M at 25°C. (Assume concentration of MnO_4^- and Mn^{2+} to be same on change in H^+ concentration). The value of x is _____. $\left[Given : \frac{2.303RT}{F} = 0.059\right]$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/IY9oIxf8DF

Q37 JEE Main 2020 · 5 Sep · Shift 1

An oxidation-reduction reaction in which
3 electrons are transferred has a ΔG^o of 17.37 kJ mol^{-1} at
25 °C. The value of E^o
cell (in V) is _____ × 10^{-2}.
(1 F = 96,500 C mol^{-1})

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/XrnNsCMTdb

Q38 JEE Main 2020 · 3 Sep · Shift 1

The photoelectric current from Na (Work function, w_0 = 2.3 eV) is stopped by the output voltage of the cell

Pt(s) | H_2 (g, 1 Bar) | HCl (aq., pH =1) | AgCl(s) | Ag(s).

The pH of aq. HCl required to stop the photoelectric current form K(w_0 = 2.25 eV), all other conditions remaining the same, is _____ $\times 10^{-2}$ (to the nearest integer).

Given, $2.303\frac{RT}{F}$ = 0.06 V;

$E^0_{AgCl|Ag|Cl^-}$ = 0.22 V

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/84CLOmiqJD

Q39 JEE Main 2020 · 2 Sep · Shift 2

For the disproportionation reaction

$2Cu^+(aq) \rightleftharpoons Cu(s) + Cu^{2+}(aq)$ at 298 K. ln K

(where K is the equilibrium constant) is

_____ $\times 10^{-1}$.

Given :

($E^0_{Cu^{2+}/Cu^+} = 0.16V$

$E^0_{Cu^+/Cu} = 0.52V$

$\frac{RT}{F} = 0.025$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/k_0BQheuOg

Q40 JEE Main 2020 · 2 Sep · Shift 1

The Gibbs change (in J) for the given reaction at

$[Cu^{2+}] = [Sn^{2+}]$ = 1 M and 298K is :

$Cu(s) + Sn^{2+}(aq.) \rightarrow Cu^{2+}(aq.) + Sn(s)$;

($E^0_{Sn^{2+}|Sn} = -0.16\,V$,

$E^0_{Cu^{2+}|Cu} = 0.34\,V$)

Take F = 96500 C mol^{-1})

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/L-IvLaVWmL

Q41 JEE Main 2020 · 8 Jan · Shift 1

What would be the electrode potential for the given half cell reaction at pH = 5? _____.

$2H_2O \rightarrow O_2 + 4H^{\oplus} + 4e^-$; E^0_{red} = 1.23 V

(R = 8.314 J mol^{-1} K^{-1} ; Temp = 298 k;

oxygen under std. atm. pressure of 1 bar)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/lTBm9f7RV6

Q42 JEE Main 2020 · 8 Jan · Shift 2

For an electrochemical cell

Sn(s) | Sn^{2+} (aq,1M)| |Pb^{2+} (aq,1M)|Pb(s)

the ratio $\frac{[Sn^{2+}]}{[Pb^{2+}]}$ when this cell attains equilibrium is _____.

(Given $E^0_{Sn^{2+}|Sn} = -0.14V$,

$E^0_{Pb^{2+}|Pb} = -0.13V$, $\frac{2.303RT}{F} = 0.06$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/tIkZTf9NaT

Electrolysis · 5 PYQs

Q43 JEE Main 2025 · 29 Jan · Shift 2

O_2 gas will be evolved as a product of electrolysis of :

(A) an aqueous solution of $AgNO_3$ using silver electrodes.

(B) an aqueous solution of $AgNO_3$ using platinum electrodes.

(C) a dilute solution of H_2SO_4 using platinum electrodes.

(D) a high concentration solution of H_2SO_4 using platinum electrodes.

Choose the correct answer from the options given below :

(A) (B) and (C) only

(B) (B) and (D) only

(C) (A) and (D) only

(D) (A) and (C) only

Step-by-step solution ▸ prepwiser.in/questions/sNrUbFEDyk

Q44 JEE Main 2025 · 22 Jan · Shift 1

Which of the following electrolyte can be used to obtain $H_2S_2O_8$ by the process of electrolysis ?

(A) Concentrated solution of sulphuric acid

(B) Dilute solution of sodium sulphate.

(C) Acidified dilute solution of sodium sulphate.

(D) Dilute solution of sulphuric acid

Step-by-step solution ▸ prepwiser.in/questions/0hCLYqhezq

Q45 JEE Main 2024 · 31 Jan · Shift 1

Number of alkanes obtained on electrolysis of a mixture of CH_3COONa and C_2H_5COONa is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/CcyEd9y6dU

Q46 JEE Main 2023 · 6 Apr · Shift 2

The product, which is not obtained during the electrolysis of brine solution is :

(A) NaOH

(B) Cl_2

(C) H_2

(D) HCl

Step-by-step solution ▸ prepwiser.in/questions/mdiZbJ6-7P

Q47 JEE Main 2022 · 24 Jun · Shift 2

In the industrial production of which of the following, molecular hydrogen is obtained as a byproduct?

(A) NaOH

(B) NaCl

(C) Na metal

(D) Na_2CO_3

Step-by-step solution ▸ prepwiser.in/questions/-pmuu4rZSg

Corrosion · 2 PYQs

Q48 JEE Main 2025 · 22 Jan · Shift 2

Given below are two statements :

Statement (I) : Corrosion is an electrochemical phenomenon in which pure metal acts as an anode and impure metal as a cathode.

Statement (II) : The rate of corrosion is more in alkaline medium than in acidic medium.

In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are true

(B) Both Statement I and Statement II are false

(C) Statement I is true but Statement II is false

(D) Statement I is false but Statement II is true

Step-by-step solution ▸ prepwiser.in/questions/2Osu2aD46O

Q49 JEE Main 2024 · 27 Jan · Shift 2

Which of the following statements is not correct about rusting of iron?

(A) Rusting of iron is envisaged as setting up of electrochemical cell on the surface of iron object.

(B) Dissolved acidic oxides SO_2, NO_2 in water act as catalyst in the process of rusting.

(C) Coating of iron surface by tin prevents rusting, even if the tin coating is peeling off.

(D) When pH lies above 9 or 10, rusting of iron does not take place.

Step-by-step solution ▸ prepwiser.in/questions/HVcDydURFV

Electrolysis and Faraday's Laws · 22 PYQs

Q50 JEE Main 2025 · 28 Jan · Shift 2

Electrolysis of 600 mL aqueous solution of NaCl for 5 min changes the pH of the solution to 12 .

The current in Amperes used for the given electrolysis is _____ . (Nearest integer).

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/ADvqDxo4yP

Q51 JEE Main 2025 · 22 Jan · Shift 1

A solution of aluminium chloride is electrolysed for 30 minutes using a current of 2 A . The amount of the aluminium deposited at the cathode is _____ .

[Given : molar mass of aluminium and chlorine are $27 g mol^{-1}$ and $35.5 g mol^{-1}$ respectively. Faraday constant $= 96500 C mol^{-1}$]

(A) 1.660 g

(B) 1.007 g

(C) 0.336 g

(D) 0.441 g

Step-by-step solution ▸ prepwiser.in/questions/L8fP_Ht11i

Q52 JEE Main 2024 · 5 Apr · Shift 2

The quantity of silver deposited when one coulomb charge is passed through $AgNO_3$ solution :

(A) $0.1 g$ atom of silver

(B) 1 chemical equivalent of silver

(C) $1 g$ of silver

(D) 1 electrochemical equivalent of silver

Step-by-step solution ▸ prepwiser.in/questions/vrRW9dt4g7

Q53 JEE Main 2024 · 1 Feb · Shift 2

The amount of electricity in Coulomb required for the oxidation of $1 mol$ of H_2O to O_2 is _____ $\times 10^5 C$.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/B-2XsdTWnZ

Q54 JEE Main 2024 · 31 Jan · Shift 1

One Faraday of electricity liberates $x \times 10^{-1}$ gram atom of copper from copper sulphate. x is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/SEe2Zk997X

Q55 JEE Main 2024 · 30 Jan · Shift 1

$0.05\mathrm{cm}$ thick coating of silver is deposited on a plate of $0.05\mathrm{m}^2$ area. The number of silver atoms deposited on plate are _____ $\times 10^{23}$. (At mass $\mathrm{Ag} = 108, \mathrm{d} = 7.9\mathrm{gcm}^{-3}$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/fq230Uk02d

Q56 JEE Main 2024 · 29 Jan · Shift 2

A constant current was passed through a solution of AuCl_4^- ion between gold electrodes. After a period of 10.0 minutes, the increase in mass of cathode was $1.314\mathrm{g}$. The total charge passed through the solution is _____ $\times 10^{-2}\mathrm{F}$.

(Given atomic mass of $\mathrm{Au} = 197$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/qgv4bYJR8C

Q57 JEE Main 2024 · 29 Jan · Shift 1

The mass of zinc produced by the electrolysis of zine sulphate solution with a steady current of $0.015\mathrm{A}$ for 15 minutes is _____ $\times 10^{-4}\mathrm{g}$.

(Atomic mass of zinc $= 65.4\mathrm{amu}$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/gTW9thBUt1

Q58 JEE Main 2024 · 27 Jan · Shift 1

The mass of silver (Molar mass of Ag : $108\mathrm{gmol}^{-1}$) displaced by a quantity of electricity which displaces $5600\mathrm{mL}$ of O_2 at S.T.P. will be _____ g.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/BssRQwd3CT

Q59 JEE Main 2023 · 13 Apr · Shift 1

A metal surface of $100\mathrm{cm}^2$ area has to be coated with nickel layer of thickness $0.001\mathrm{mm}$. A current of $2\mathrm{A}$ was passed through a solution of $\mathrm{Ni}\left(\mathrm{NO}_3\right)_2$ for 'x' seconds to coat the desired layer. The value of x is _____. (Nearest integer) (ρ_{Ni} (density of Nickel) is $10\mathrm{gmL}$, Molar mass of Nickel is $60\mathrm{gmol}^{-1}$ $\mathrm{F} = 96500\mathrm{Cmol}^{-1}$)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/toJuHtsNlz

Q60 JEE Main 2023 · 31 Jan · Shift 1

Which one of the following statements is correct for electrolysis of brine solution?

(A) O_2 is formed at cathode

(B) H_2 is formed at anode

(C) Cl_2 is formed at cathode

(D) OH^- is formed at cathode

Step-by-step solution ▸ prepwiser.in/questions/m3dTl_Uvgu

Q61 JEE Main 2022 · 26 Jul · Shift 1

The amount of charge in F (Faraday) required to obtain one mole of iron from $\mathrm{Fe_3O_4}$ is _____. (Nearest Integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/5WhAJqsUOc

Q62 JEE Main 2022 · 29 Jun · Shift 1

A dilute solution of sulphuric acid is electrolysed using a current of 0.10 A for 2 hours to produce hydrogen and oxygen gas. The total volume of gases produced a STP is _____ cm^3. (Nearest integer)

[Given : Faraday constant F = 96500 C mol^{-1} at STP, molar volume of an ideal gas is 22.7 L mol^{-1}]

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/cyVNoMSSI1

Q63 JEE Main 2022 · 28 Jun · Shift 1

The quantity of electricity in Faraday needed to reduce 1 mol of $Cr_2O_7^{2-}$ to Cr^{3+} is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/5HbmdrxvT2

Q64 JEE Main 2022 · 25 Jun · Shift 2

A solution of $Fe_2(SO_4)_3$ is electrolyzed for 'x' min with a current of 1.5 A to deposit 0.3482 g of Fe. The value of x is _____. [nearest integer]

Given : 1 F = 96500 C mol^{-1}

Atomic mass of Fe = 56 g mol^{-1}

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/H95Ja5p5Dv

Q65 JEE Main 2021 · 27 Jul · Shift 1

The product obtained from the electrolytic oxidation of acidified sulphate solutions, is :

(A) HSO_4^-

(B) HO_3SOOSO_3H

(C) HO_2SOSO_2H

(D) HO_3SOSO_3H

Step-by-step solution ▸ prepwiser.in/questions/v30GPmtEJ6

Q66 JEE Main 2021 · 20 Jul · Shift 2

Potassium chlorate is prepared by electrolysis of KCl in basic solution as shown by following equation.

$6OH^- + Cl^- \rightarrow ClO_3^- + 3H_2O + 6e^-$

A current of xA has to be passed for 10h to produce 10.0g of potassium chlorate. The value of x is _____. (Nearest integer)

(Molar mass of $KClO_3$ = 122.6 g mol^{-1}, F = 96500 C)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/6OZpAy4xaC

Q67 JEE Main 2021 · 26 Feb · Shift 1

Consider the following reaction

$MnO_4^- + 8H^+ + 5e^- \rightarrow Mn^{+2} + 4H_2O, E^o = 1.51V.$

The quantity of electricity required in Faraday to reduce five moles of MnO_4^- is _____. (Integer answer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/yP-aCfm1gh

Q68 JEE Main 2020 · 6 Sep · Shift 1

Potassium chlorate is prepared by the electrolysis of KCl in basic solution

$6OH^- + Cl^- \rightarrow ClO_3^- + 3H_2O + 6e^-$

If only 60% of the current is utilized in the reaction, the time (rounded to the nearest hour) required to produce 10 g of $KClO_3$ using a current of 2 A is_____.

(Given : F = 96,500 C mol^{-1}; molar mass of $KClO_3$ = 122 g mol^{-1})

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/_jJdcq8XNs

Q69 JEE Main 2020 · 4 Sep · Shift 2

250 mL of a waste solution obtained from the workshop of a goldsmith contains 0.1 M $AgNO_3$ and 0.1 M AuCl. The solution was electrolyzed at 2V by passing a current of 1A for 15 minutes. The metal/metals electrodeposited will be

[$E^0_{Ag^+/Ag}$ = 0.80 V, $E^0_{Au^+/Au}$ = 1.69 V]

(A) Silver and gold in equal mass proportion

(B) Silver and gold in proportion to their atomic weights

(C) Only gold

(D) Only silver

Step-by-step solution ▸ prepwiser.in/questions/zoHNe8TAFY

Q70 JEE Main 2020 · 3 Sep · Shift 2

An acidic solution of dichromate is electrolyzed for 8 minutes using 2A current. As per the following equation

$Cr_2O_7^{2-} + 14H^+ + 6e^- \rightarrow 2Cr^{3+} + 7H_2O$

The amount of Cr^{3+} obtained was 0.104 g. The efficiency of the process(in%) is (Take : F = 96000 C, At. mass of chromium = 52) _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/T-CtiMBkPS

Q71 JEE Main 2020 · 9 Jan · Shift 1

108 g of silver (molar mass 108 g mol^{-1}) is deposited at cathode from $AgNO_3$(aq) solution by a certain quantity of electricity. The volume (in L) of oxygen gas produced at 273 K and 1 bar pressure from water by the same quantity of electricity is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/CLiS1ZjsJx

Conductance and Conductivity · 20 PYQs

Q72 JEE Main 2025 · 2 Apr · Shift 2

$0.2\%(w/v)$ solution of NaOH is measured to have resistivity $870.0 m\Omega m$. The molar conductivity of the solution will be_____$\times 10^2 mSdm^2mol^{-1}$. (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/uwC4viUmJI

Q73 JEE Main 2024 · 4 Apr · Shift 2

For a strong electrolyte, a plot of molar conductivity against (concentration) $^{1/2}$ is a straight line, with a negative slope, the correct unit for the slope is

(A) $Scm^2mol^{-3/2}L$

(B) $Scm^2mol^{-3/2}L^{-1/2}$

(C) $Scm^2mol^{-1}L^{1/2}$

(D) $Scm^2mol^{-3/2}L^{1/2}$

Step-by-step solution ▸ prepwiser.in/questions/zr5jOrZV39

Q74 JEE Main 2024 · 31 Jan · Shift 1

Identify the factor from the following that does not affect electrolytic conductance of a solution.

(A) The nature of solvent used.

(B) The nature of the electrolyte added.

(C) The nature of the electrode used.

(D) Concentration of the electrolyte.

Step-by-step solution ▸ prepwiser.in/questions/8gMK6U39SF

Q75 JEE Main 2024 · 31 Jan · Shift 2

The values of conductivity of some materials at $298.15\mathrm{K}^{-1}\mathrm{inSm}^{-1}$ are 2.1×10^{3},

$1.0 \times 10^{-16}, 1.2 \times 10, 3.91, 1.5 \times 10^{-2}, 1 \times 10^{-7}, 1.0 \times 10^{3}$.

The number of conductors among the materials is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/p8z04Ns9Qg

Q76 JEE Main 2023 · 15 Apr · Shift 1

The number of correct statements from the following is _____.

(A) Conductivity always decreases with decrease in concentration for both strong and weak electrolytes.

(B) The number of ions per unit volume that carry current in a solution increases on dilution.

(C) Molar conductivity increases with decrease in concentration

(D) The variation in molar conductivity is different for strong and weak electrolytes

(E) For weak electrolytes, the change in molar conductivity with dilution is due to decrease in degree of dissociation.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Lw1igx-UUZ

Q77 JEE Main 2023 · 10 Apr · Shift 2

The specific conductance of $0.0025\mathrm{M}$ acetic acid is $5 \times 10^{-5}\mathrm{Scm}^{-1}$ at a certain temperature. The dissociation constant of acetic acid is _____ $\times 10^{-7}$ (Nearest integer)

Consider limiting molar conductivity of $\mathrm{CH_3COOH}$ as $400\mathrm{Scm}^{2}\mathrm{mol}^{-1}$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/FhpYSHzBb0

Q78 JEE Main 2023 · 31 Jan · Shift 2

The resistivity of a $0.8\mathrm{M}$ solution of an electrolyte is $5 \times 10^{-3}\Omega\mathrm{cm}$.

Its molar conductivity is _____ $\times 10^{4}\Omega^{-1}\mathrm{cm}^{2}\mathrm{mol}^{-1}$. (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Pj_eyHIgQ7

Q79 JEE Main 2022 · 29 Jul · Shift 1

Resistance of a conductivity cell (cell constant $129\mathrm{m}^{-1}$) filled with $74.5\ \mathrm{ppm}$ solution of KCl is $100\ \Omega$ (labelled as solution 1). When the same cell is filled with KCl solution of $149\ \mathrm{ppm}$, the resistance is $50\ \Omega$ (labelled as solution 2). The ratio of molar conductivity of solution 1 and solution 2 is i.e. $\frac{\Lambda_1}{\Lambda_2} = x \times 10^{-3}$. The value of x is _____. (Nearest integer)

Given, molar mass of KCl is $74.5\mathrm{gmol}^{-1}$.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/d-zOqgn182

Q80 JEE Main 2022 · 25 Jul · Shift 2

The molar conductivity of a conductivity cell filled with 10 moles of 20 mL NaCl solution is Λ_{m1} and that of 20 moles another identical cell heaving 80 mL NaCl solution is Λ_{m2}. The conductivities exhibited by these two cells are same. The relationship between Λ_{m2} and Λ_{m1} is

(A) $\Lambda_{m2} = 2\Lambda_{m1}$

(B) $\Lambda_{m2} = \Lambda_{m1} / 2$

(C) $\Lambda_{m2} = \Lambda_{m1}$

(D) $\Lambda_{m2} = 4\Lambda_{m1}$

Step-by-step solution ▸ prepwiser.in/questions/xngTQx1QyB

Q81 JEE Main 2022 · 28 Jun · Shift 1

The solubility product of a sparingly soluble salt A_2X_3 is 1.1×10^{-23}. If specific conductance of the solution is 3×10^{-5} S m^{-1}, the limiting molar conductivity of the solution is $x \times 10^{-3}$ S m^2 mol^{-1}. The value of x is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/5HnxYvFEXm

Q82 JEE Main 2022 · 24 Jun · Shift 2

The resistance of a conductivity cell containing 0.01 M KCl solution at 298 K is 1750 Ω. If the conductivity of 0.01 M KCl solution at 298 K is 0.152×10^{-3} S cm^{-1}, then the cell constant of the conductivity cell is _____ $\times 10^{-3}$ cm^{-1}.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/cYUXGoG-C7

Q83 JEE Main 2021 · 1 Sep · Shift 2

If the conductivity of mercury at 0°C is 1.07×10^6 S m^{-1} and the resistance of a cell containing mercury is 0.243Ω, then the cell constant of the cell is x $\times 10^4$ m^{-1}. The value of x is _____. (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/qSYlhG3M8v

Q84 JEE Main 2021 · 31 Aug · Shift 2

Match List - I with List - II

List - I (Parmeter)	List - II (Unit)
(a) Cell constant	(i) $S\,cm^2mol^{-1}$
(b) Molar conductivity	(ii) Dimensionless
(c) Conductivity	(iii) m^{-1}
(d) Degree of dissociation of electrolyte	(iv) $\Omega^{-1}m^{-1}$

Choose the most appropriate answer from the options given below :

(A) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

(B) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)

(C) (a)-(i), (b)-(iv), (c)-(iii), (d)-(ii)

(D) (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)

Step-by-step solution ▸ prepwiser.in/questions/th305TpyG4

Q85 JEE Main 2021 · 27 Aug · Shift 2

The resistance of a conductivity cell with cell constant 1.14 cm^{-1}, containing 0.001 M KCl at 298 K is 1500 Ω. The molar conductivity of 0.001 M KCl solution at 298 K in S cm^2 mol^{-1} is _____. (Integer answer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/7BO2vHDm6B

Q86 JEE Main 2021 · 26 Aug · Shift 1

Given below are two statements :

Statement I : The limiting molar conductivity of KCl (strong electrolyte) is higher compared to that of CH_3COOH (weak electrolyte).

Statement II : Molar conductivity decreases with decrease in concentration of electrolyte.

In the light of the above statements, choose the most appropriate answer from the options given below :

(A) Statement I is true but Statement II is false.

(B) Statement I is false but Statement II is true.

(C) Both Statement I and Statement II are true.

(D) Both Statement I and Statement II are false.

Step-by-step solution ▸ prepwiser.in/questions/dGbIg0kRdO

Q87 JEE Main 2021 · 17 Mar · Shift 1

The correct order of conductivity of ions in water is :

(A) $K^+ > Na^+ > Cs^+ > Rb^+$

(B) $Cs^+ > Rb^+ > K^+ > Na^+$

(C) $Na^+ > K^+ > Rb^+ > Cs^+$

(D) $Rb^+ > Na^+ > K^+ > Li^+$

Step-by-step solution ▸ prepwiser.in/questions/_mNA8y4jYV

Q88 JEE Main 2021 · 17 Mar · Shift 2

A KCl solution of conductivity 0.14 S m^{-1} shows a resistance of 4.19Ω in a conductivity cell. If the same cell is filled with an HCl solution, the resistance drops to 1.03Ω. The conductivity of the HCl solution is _____ $\times 10^{-2}$ S m^{-1}. (Round off to the Nearest Integer).

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/nVtva9J7U7

Q89 JEE Main 2021 · 16 Mar · Shift 2

A 5.0 m mol dm^{-3} aqueous solution of KCl has a conductance of 0.55 mS when measured in a cell of cell constant 1.3 cm^{-1}. The molar conductivity of this solution is _____ mSm^2 mol^{-1}. (Round off to the Nearest Integer).

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/fZzdX8zQf_

Q90 JEE Main 2020 · 3 Sep · Shift 1

Let C_{NaCl} and C_{BaSO_4} be the conductances (in S) measured for saturated aqueous solutions of NaCl and $BaSO_4$, respectively, at a temperature T. Which of the following is false?

(A) Ionic mobilities of ions from both salts increase with T.

(B) $C_{NaCl}(T_2) > C_{NaCl}(T_1)$ for $T_2 > T_1$

(C) $C_{BaSO_4}(T_2) > C_{BaSO_4}(T_1)$ for $T_2 > T_1$

(D) $C_{NaCl} >> C_{BaSO_4}$ at a given T

Step-by-step solution ▸ prepwiser.in/questions/qjU3XyjvGU

Q91 JEE Main 2020 · 9 Jan · Shift 2

Amongst the following, the form of water with the lowest ionic conductance at 298 K is :

(A) saline water used for intravenous injection

(B) sea water

(C) distilled water

(D) water from a well

Step-by-step solution ▸ prepwiser.in/questions/VzZVpsogD9

Batteries and Fuel Cells · 7 PYQs

Q92 JEE Main 2025 · 4 Apr · Shift 1

On charging the lead storage battery, the oxidation state of lead changes from x_1 to y_1 at the anode and from x_2 to y_2 at the cathode. The values of x_1, y_1, x_2, y_2 are respectively :

(A) $0, +2, +4, +2$

(B) $+2, 0, 0, +4$

(C) $+4, +2, 0, +2$

(D) $+2, 0, +2, +4$

Step-by-step solution ▸ prepwiser.in/questions/99yLFjfHyO

Q93 JEE Main 2025 · 3 Apr · Shift 2

The standard cell potential $\left(E_{cell}^{\ominus}\right)$ of a fuel cell based on the oxidation of methanol in air that has been used to power television relay station is measured as 1.21 V . The standard half cell reduction potential for O_2 $\left(E_{O_2/H_2O}^{\circ}\right)$ is 1.229 V .

Choose the correct statement :

(A) Reactants are fed at one go to each electrode.

(B) Oxygen is formed at the anode.

(C) The standard half cell reduction potential for the reduction of CO_2 $\left(E_{CO_2/CH_3OH}^{\circ}\right)$ is 19 mV

(D) Reduction of methanol takes place at the cathode.

Step-by-step solution ▸ prepwiser.in/questions/tZUi6IscuK

Q94 JEE Main 2025 · 29 Jan · Shift 2

Match List - I with List - II :

List - I (Applications)	List - II (Batteries/Cell)
(A) Transistors	(I) Anode - Zn/Hg; Cathode - HgO + C
(B) Hearing aids	(II) Hydrogen fuel cell
(C) Inverters	(III) Anode - Zn; Cathode - Carbon
(D) Apollo space ship	(IV) Anode - Pb; Cathode - Pb | PbO_2

Choose the correct answer from the options given below :

(A) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

(B) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

(C) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)

(D) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)

Step-by-step solution ▸ prepwiser.in/questions/rLmUX9qb9-

Q95 JEE Main 2024 · 5 Apr · Shift 1

The reaction at cathode in the cells commonly used in clocks involves.

(A) oxidation of Mn from +2 to +7

(B) reduction of Mn from +4 to +3

(C) oxidation of Mn from +3 to +4

(D) reduction of Mn from +7 to +2

Step-by-step solution ▸ prepwiser.in/questions/xy8DrkJTAr

Q96 JEE Main 2024 · 4 Apr · Shift 2

Fuel cell, using hydrogen and oxygen as fuels,

A. has been used in spaceship

B. has as efficiency of 40% to produce electricity

C. uses aluminum as catalysts

D. is eco-friendly

E. is actually a type of Galvanic cell only

Choose the correct answer from the options given below:

(A) A, D, E only

(B) A, B, C only

(C) A, B, D only

(D) A, B, D, E only

Step-by-step solution ▸ prepwiser.in/questions/Y3OJ7caPLU

Q97 JEE Main 2024 · 31 Jan · Shift 1

The metals that are employed in the battery industries are

A. Fe

B. Mn

C. Ni

D. Cr

E. Cd

Choose the correct answer from the options given below:

(A) A, B, C, D and E

(B) A, B, C and D only

(C) B, D and E only

(D) B, C and E only

Step-by-step solution ▸ prepwiser.in/questions/NISkbZKz6U

Q98 JEE Main 2023 · 12 Apr · Shift 1

For lead storage battery pick the correct statements

A. During charging of battery, $\mathrm{PbSO_4}$ on anode is converted into $\mathrm{PbO_2}$

B. During charging of battery, $\mathrm{PbSO_4}$ on cathode is converted into $\mathrm{PbO_2}$

C. Lead storage battery consists of grid of lead packed with $\mathrm{PbO_2}$ as anode

D. Lead storage battery has $\sim 38\%$ solution of sulphuric acid as an electrolyte

Choose the correct answer from the options given below:

(A) A, B, D only

(B) B, C only

(C) B, C, D only

(D) B, D only

Step-by-step solution ▸ prepwiser.in/questions/toUUKoMGAO

Kohlrausch's Law · 7 PYQs

Q99 JEE Main 2025 · 4 Apr · Shift 2

The molar conductance of an infinitely dilute solution of ammonium chloride was found to be $185 \mathrm{Scm^2mol^{-1}}$ and the ionic conductance of hydroxyl and chloride ions are 170 and $70 \mathrm{Scm^2mol^{-1}}$, respectively. If molar conductance of 0.02 M solution of ammonium hydroxide is $85.5 \mathrm{Scm^2mol^{-1}}$, its degree of dissociation is given by $x \times 10^{-1}$. The value of x is _____ . (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/ROlWBqwuRo

Q100 JEE Main 2025 · 3 Apr · Shift 1

Correct order of limiting molar conductivity for cations in water at 298 K is :

(A) $\mathrm{H^+ > Na^+ > K^+ > Ca^{2+} > Mg^{2+}}$

(B) $\mathrm{H^+ > Ca^{2+} > Mg^{2+} > K^+ > Na^+}$

(C) $\mathrm{Mg^{2+} > H^+ > Ca^{2+} > K^+ > Na^+}$

(D) $\mathrm{H^+ > Na^+ > Ca^{2+} > Mg^{2+} > K^+}$

Step-by-step solution ▸ prepwiser.in/questions/QK82kXn_OG

Q101 JEE Main 2024 · 9 Apr · Shift 2

Which out of the following is a correct equation to show change in molar conductivity with respect to concentration for a weak electrolyte, if the symbols carry their usual meaning :

(A) $\Lambda_m - \Lambda_m^\circ + AC^{\frac{1}{2}} = 0$

(B) $\Lambda_m^2 C + K_a \Lambda_m^{\circ^2} - K_a \Lambda_m \Lambda_m^\circ = 0$

(C) $\Lambda_m - \Lambda_m^\circ - AC^{\frac{1}{2}} = 0$

(D) $\Lambda_m^2 C - K_a \Lambda_m^{\circ 2} + K_a \Lambda_m \Lambda_m^\circ = 0$

Step-by-step solution ▸ prepwiser.in/questions/QhQXFxLvjN

Q102 JEE Main 2024 · 5 Apr · Shift 1

Molar ionic conductivities of divalent cation and anion are $57 \mathrm{Scm^2mol^{-1}}$ and $73 \mathrm{Scm^2mol^{-1}}$ respectively. The molar conductivity of solution of an electrolyte with the above cation and anion will be:

(A) $187 \mathrm{Scm^2mol^{-1}}$

(B) $260 \mathrm{Scm^2mol^{-1}}$

(C) $65 \mathrm{Scm^2mol^{-1}}$

(D) $130 \mathrm{Scm^2mol^{-1}}$

Step-by-step solution ▸ prepwiser.in/questions/ytBC9P_8w6

Q103 JEE Main 2022 · 27 Jun · Shift 1

The limiting molar conductivities of NaI, $NaNO_3$ and $AgNO_3$ are 12.7, 12.0 and 13.3 mS m^2 mol^{-1}, respectively (all at 25°C). The limiting molar conductivity of AgI at this temperature is _____ mS m^2 mol^{-1}.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/gJnIuPqM-4

Q104 JEE Main 2021 · 27 Jul · Shift 1

The conductivity of a weak acid HA of concentration 0.001 mol L^{-1} is 2.0×10^{-5} S cm^{-1}. If Λ_m^o(HA) = 190 S cm^2 mol^{-1}, the ionization constant (K_a) of HA is equal to _____ $\times 10^{-6}$. (Round off to the Nearest Integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/lEtIZS82-m

Q105 JEE Main 2021 · 18 Mar · Shift 2

The molar conductivities at infinite dilution of barium chloride, sulphuric acid and hydrochloric acid are 280, 860 and 426 S cm^2 mol^{-1} respectively. The molar conductivity at infinite dilution of barium sulphate is _____ S cm^2 mol^{-1}. (Round off to the Nearest Integer).

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/RV77Y6N75u

Standard Electrode Potential · 21 PYQs

Q106 JEE Main 2025 · 7 Apr · Shift 2

Given below are two statements :

1 M aqueous solutions of each of $Cu(NO_3)_2$, $AgNO_3$, $Hg_2(NO_3)_2$, $Mg(NO_3)_2$ are electrolysed using inert electrodes. Given: $\mathbf{E^0}_{Ag^+/Ag}$ = 0.80 V, $\mathbf{E^0}_{Hg_2^{2+}/Hg}$ = 0.79 V, $\mathbf{E^0}_{Cu^{2+}/Cu}$ = 0.24 V and $\mathbf{E^0}_{Mg^{2+}/Mg}$ = -2.37 V.

Statement (I) : With increasing voltage, the sequence of deposition of metals on the cathode will be Ag, Hg and Cu.

Statement (II) : Magnesium will not be deposited at the cathode instead oxygen gas will be evolved at the cathode.

In the light of the above statements, choose the most appropriate answer from the options given below :

(A) Both **Statement I** and **Statement II** are incorrect

(B) **Statement I** is incorrect but **Statement II** is correct

(C) **Statement I** is correct but **Statement II** is incorrect

(D) Both **Statement I** and **Statement II** are correct

Step-by-step solution ▸ prepwiser.in/questions/7PRnow9UAx

Q107 JEE Main 2025 · 29 Jan · Shift 1

The standard reduction potential values of some of the p-block ions are given below. Predict the one with the strongest oxidising capacity.

(A) $E^o_{Sn^{4+}/Sn^{2+}} = +1.15\ V$

(B) $E^o_{Al^{3+}/Al} = -1.66\ V$

(C) $E^o_{Pb^{4+}/Pb^{2+}} = +1.67\ V$

(D) $E^o_{Tl^{3+}/Tl} = +1.26\ V$

Step-by-step solution ▸ prepwiser.in/questions/HNA9tNZyor

Q108 JEE Main 2025 · 24 Jan · Shift 2

Based on the data given below :

$$E^\circ_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33V \quad E^\circ_{Cl_2/Cl^{(-)}} = 1.36V$$
$$E^0_{MnO_4^-/Mn^{2+}} = 1.51V \quad E^\circ_{Cr^{3+}/Cr} = -0.74V$$

the strongest reducing agent is :

(A) Cl^-

(B) MnO_4^-

(C) Cr

(D) Mn^{2+}

Step-by-step solution ▸ prepwiser.in/questions/1jzQMRV0fg

Q109 JEE Main 2025 · 23 Jan · Shift 2

Standard electrode potentials for a few half cells are mentioned below :

$$E^\circ_{Cu^{2+}/Cu} = 0.34V, E^\circ_{Zn^{2+}/Zn} = -0.76V$$
$$E^\circ_{Ag^+/Ag} = 0.80V, E^\circ_{Mg^{2+}/Mg} = -2.37V$$

Which one of the following cells gives the most negative value of ΔG° ?

(A) $Zn\left|Zn^{2+}(1M)\right\|Ag^+(1M)\left|Ag\right.$

(B) $Ag\left|Ag^+(1M)\right|\left|Mg^{2+}(1M)\right|Mg$

(C) $Zn\left|Zn^{2+}(1M)\right|\left|Mg^{2+}(1M)\right|Mg$

(D) $Cu\left|Cu^{2+}(1M)\right|\left|Ag^+(1M)\right|Ag$

Step-by-step solution ▸ prepwiser.in/questions/aRJGrvPtts

Q110 JEE Main 2024 · 9 Apr · Shift 1

The standard reduction potentials at $298K$ for the following half cells are given below :

$$Cr_2O_7^{2-} + 14H^+ + 6e^- \rightarrow 2Cr^{3+} + 7H_2O, \quad E^\circ = 1.33V$$

$$Fe^{3+}(aq) + 3e^- \rightarrow Fe \quad E^\circ = -0.04V$$
$$Ni^{2+}(aq) + 2e^- \rightarrow Ni \quad E^\circ = -0.25V$$
$$Ag^+(aq) + e^- \rightarrow Ag \quad E^\circ = 0.80V$$
$$Au^{3+}(aq) + 3e^- \rightarrow Au \quad E^\circ = 1.40V$$

Consider the given electrochemical reactions,

The number of metal(s) which will be oxidized be $Cr_2O_7^{2-}$, in aqueous solution is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/_6gEAw4y6_

Q111 JEE Main 2024 · 1 Feb · Shift 2

The strongest reducing agent among the following is :

(A) SbH_3 **(B)** NH_3

(C) BiH_3 **(D)** PH_3

Step-by-step solution ▸ prepwiser.in/questions/EYr49Nm4Tm

Q112 JEE Main 2024 · 1 Feb · Shift 2

Consider the following redox reaction :

$$MnO_4^- + H^+ + H_2C_2O_4 \rightleftharpoons Mn^{2+} + H_2O + CO_2$$

The standard reduction potentials are given as below $\left(E^0_{red}\right)$:

$$E^\circ_{MnO_4^-/Mn^{2+}} = +1.51V$$

$$E^\circ_{CO_2/H_2C_2O_4} = -0.49V$$

If the equilibrium constant of the above reaction is given as $K_{eq} = 10^x$, then the value of $x =$ _____ (nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/R4k7aoVGwV

Q113 JEE Main 2024 · 30 Jan · Shift 2

Reduction potential of ions are given below:

ClO_4^-	IO_4^-	BrO_4^-
$E^\circ = 1.19V$	$E^\circ = 1.65V$	$E^\circ = 1.74V$

The correct order of their oxidising power is :

(A) $IO_4^- > BrO_4^- > ClO_4^-$

(B) $BrO_4^- > ClO_4^- > IO_4^-$

(C) $ClO_4^- > IO_4^- > BrO_4^-$

(D) $BrO_4^- > IO_4^- > ClO_4^-$

Step-by-step solution ▸ prepwiser.in/questions/mErYsMxicy

Q114 JEE Main 2023 · 11 Apr · Shift 1

In an electrochemical reaction of lead, at standard temperature, if $E^0\left(Pb^{2+}/Pb\right) = m$ Volt and $E^0\left(Pb^{4+}/Pb\right) = n$ Volt, then the value of $E^0\left(Pb^{2+}/Pb^{4+}\right)$ is given by $m - xn$. The value of x is _____. (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/Ca5nbeV_Qb

Q115 JEE Main 2023 · 10 Apr · Shift 1

$$\mathrm{FeO_4^{2-}} \xrightarrow{+2.2\mathrm{V}} \mathrm{Fe^{3+}} \xrightarrow{+0.70\mathrm{V}} \mathrm{Fe^{2+}} \xrightarrow{-0.45\mathrm{V}} \mathrm{Fe^0}$$

$E^{\theta}_{FeO_4^{2-}/Fe^{2+}}$ is $x \times 10^{-3}$ V. The value of x is _____

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/h1GbGKdLML

Q116 JEE Main 2023 · 6 Apr · Shift 2

The standard reduction potentials at $298\mathrm{K}$ for the following half cells are given below:

$$\mathrm{NO_3^- + 4H^+ + 3e^- \rightarrow NO(g) + 2H_2O} \quad \mathrm{E^{\theta} = 0.97V}$$

$$\mathrm{V^{2+}(aq) + 2e^- \rightarrow V} \qquad \mathrm{E^{\theta} = -1.19V}$$

$$\mathrm{Fe^{3+}(aq) + 3e^- \rightarrow Fe} \qquad \mathrm{E^{\theta} = -0.04V}$$

$$\mathrm{Ag^{+}(aq) + e^- \rightarrow Ag(s)} \qquad \mathrm{E^{\theta} = 0.80V}$$

$$\mathrm{Au^{3+}(aq) + 3e^- \rightarrow Au(s)} \qquad \mathrm{E^{\theta} = 1.40V}$$

The number of metal(s) which will be oxidized by $\mathrm{NO_3^-}$ in aqueous solution is _____.

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/1KlrNlC6fD

Q117 JEE Main 2023 · 6 Apr · Shift 1

The standard electrode potential of $\mathrm{M^+/M}$ in aqueous solution does not depend on

(A) Ionisation of a gaseous metal atom

(B) Sublimation of a solid metal

(C) Ionisation of a solid metal atom

(D) Hydration of a gaseous metal ion

Step-by-step solution ▸ prepwiser.in/questions/bmFGX11XF9

Q118 JEE Main 2023 · 29 Jan · Shift 1

The standard electrode potential $(\mathrm{M^{3+}/M^{2+}})$ for V, Cr, Mn & Co are -0.26 V, -0.41 V, + 1.57 V and + 1.97 V, respectively. The metal ions which can liberate $\mathrm{H_2}$ from a dilute acid are :

(A) $\mathrm{Mn^{2+}}$ and $\mathrm{Co^{2+}}$

(B) $\mathrm{V^{2+}}$ and $\mathrm{Mn^{2+}}$

(C) $\mathrm{V^{2+}}$ and $\mathrm{Cr^{2+}}$

(D) $\mathrm{Cr^{2+}}$ and $\mathrm{Co^{2+}}$

Step-by-step solution ▸ prepwiser.in/questions/5yL_4P-0uI

Q119 JEE Main 2023 · 25 Jan · Shift 2

Which one among the following metals is the weakest reducing agent?

(A) K

(B) Na

(C) Li

(D) Rb

Step-by-step solution ▸ prepwiser.in/questions/YUM_6BNzG1

Q120 JEE Main 2022 · 28 Jun · Shift 2

For the given reactions

$Sn^{2+} + 2e^- \rightarrow Sn$

$Sn^{4+} + 4e^- \rightarrow Sn$

the electrode potentials are ; $E^o_{Sn^{2+}/Sn} = -0.140$ V and $E^o_{Sn^{4+}/Sn} = +0.010$ V. The magnitude of standard electrode potential for Sn^{4+}/Sn^{2+} i.e. $E^o_{Sn^{4+}/Sn^{2+}}$ is _____ $\times 10^{-2}$ V. (Nearest integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/ZqDHyyLJzT

Q121 JEE Main 2022 · 27 Jun · Shift 2

In 3d series, the metal having the highest M^{2+}/M standard electrode potential is :

(A) Cr **(B)** Fe

(C) Cu **(D)** Zn

Step-by-step solution ▸ prepwiser.in/questions/L4ijtInh9J

Q122 JEE Main 2022 · 25 Jun · Shift 1

In a cell, the following reactions take place

$$Fe^{2+} \rightarrow Fe^{3+} + e^- \quad E^o_{Fe^{3+}/Fe^{2+}} = 0.77\,V$$
$$2I^- \rightarrow I_2 + 2e^- \quad E^o_{I_2/I^-} = 0.54\,V$$

The standard electrode potential for the spontaneous reaction in the cell is x $\times 10^{-2}$ V 298 K. The value of x is _____. (Nearest Integer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/eqk0JfRhsg

Q123 JEE Main 2022 · 25 Jun · Shift 2

The correct order of reduction potentials of the following pairs is

A. Cl_2/Cl^-

B. I^2/I^-

C. Ag^+/Ag

D. Na^+/Na

E. Li^+/Li

Choose the correct answer from the options given below.

(A) A > C > B > D > E **(B)** A > B > C > D > E

(C) A > C > B > E > D **(D)** A > B > C > E > D

Step-by-step solution ▸ prepwiser.in/questions/D5NmWdTGaE

Q124 JEE Main 2021 · 26 Aug · Shift 1

These are physical properties of an element

(A) Sublimation enthalpy

(B) Ionisation enthalpy

(C) Hydration enthalpy

(D) Electron gain enthalpy

The total number of above properties that affect the reduction potential is _____ (Integer answer)

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/7jfjkDbg7Q

Q125 JEE Main 2021 · 18 Mar · Shift 1

For the reaction

$2Fe^{3+}(aq) + 2I^{-}(aq) \rightarrow 2Fe^{2+}(aq) + I_2(s)$

the magnitude of the standard molar Gibbs free energy change, $\Delta_r G^o_m$ = − _____ kJ (Round off to the Nearest Integer).

$$\begin{bmatrix} E^o_{Fe^{2+}/Fe(s)} = -0.440V; & E^o_{Fe^{3+}/Fe(s)} = -0.036V \\ E^o_{I_2/2I^-} = 0.539V; & F = 96500C \end{bmatrix}$$

Numerical answer — enter the value.

Step-by-step solution ▸ prepwiser.in/questions/YoFf8H-OyB

Q126 JEE Main 2020 · 7 Jan · Shift 1

Given that the standard potentials (E^o) of Cu^{2+}/Cu and Cu^{+}/Cu are 0.34 V and 0.522 V respectively, the E^o of Cu^{2+}/Cu^{+} :

(A) - 0.182 V

(B) - 0.158 V

(C) 0.182 V

(D) +0.158 V

Step-by-step solution ▸ prepwiser.in/questions/_tCDTXOShH

Galvanic Cells · 2 PYQs

Q127 JEE Main 2024 · 8 Apr · Shift 2

The reaction;

$$\frac{1}{2}H_{2(g)} + AgCl_{(s)} \rightarrow H^{+}_{(aq)} + Cl^{-}_{(aq)} + Ag_{(s)}$$

occurs in which of the following galvanic cell :

(A) $Pt\left|H_{2(g)}\right|HCl_{(soln.)}\left|AgNO_{3(aq)}\right|Ag$

(B) $Ag\left|AgCl_{(s)}\right|KCl_{(soln.)}\left|AgNO_{3\ (aq.)}\right|Ag$

(C) $Pt\left|H_{2(g)}\right|KCl_{(soln.)}\left|AgCl_{(s)}\right|Ag$

(D) $Pt\left|H_{2(g)}\right|HCl_{(soln.)}\left|AgCl_{(s)}\right|Ag$

Step-by-step solution ▸ prepwiser.in/questions/LY8KkNa5w4

Q128 JEE Main 2023 · 8 Apr · Shift 1

The reaction

$$\frac{1}{2}H_2(g) + AgCl(s) \rightleftharpoons H^{+}(aq) + Cl^{-}(aq) + Ag(s)$$

occurs in which of the given galvanic cell.

(A) $Ag|AgCl(s)|KCl\,(sol^{n})\,|AgNO_3|\,Ag$

(B) $Pt\,|H_2(g)|\,HCl\,(sol^{n})\,|AgCl(s)|Ag$

(C) $Pt\,|H_2(g)|\,HCl\,(sol^{n})\,|AgNO_3\,(sol^{n})|\,Ag$

(D) $Pt\,|H_2(g)|\,KCl\,(sol^{n})\,|AgCl(s)|Ag$

Step-by-step solution ▸ prepwiser.in/questions/B_vuFjCSVb

Answer key — Electrochemistry

Numbers match the question numbers above. For full working, open the solution link under each question.

1	**A**	2	**D**	3	**C**	4	**4**	5	**1**	6	**25**	7	**A**	8	**10**
9	**D**	10	**B**	11	**B**	12	**1**	13	**18**	14	**25**	15	**3**	16	**6**
17	**275**	18	**10**	19	**17**	20	**10**	21	**3**	22	**917**	23	**34**	24	**4**
25	**B**	26	**7**	27	**983**	28	**C**	29	**5**	30	**109**	31	**28**	32	**24**
33	**3**	34	**147**	35	**1**	36	**3776**	37	**-6**	38	**142**	39	**144**	40	**96500**
41	**1**	42	**2**	43	**A**	44	**A**	45	**3**	46	**D**	47	**A**	48	**C**
49	**C**	50	**2**	51	**C**	52	**D**	53	**2**	54	**5**	55	**11**	56	**2**
57	**46**	58	**108**	59	**161**	60	**D**	61	**3**	62	**127**	63	**6**	64	**20**
65	**B**	66	**1**	67	**25**	68	**11**	69	**C**	70	**60**	71	**5**	72	**23**
73	**D**	74	**C**	75	**4**	76	**3**	77	**66**	78	**25**	79	**1000**	80	**A**
81	**3**	82	**266**	83	**26**	84	**A**	85	**760**	86	**D**	87	**B**	88	**57**
89	**14**	90	**D**	91	**C**	92	**D**	93	**C**	94	**A**	95	**B**	96	**A**
97	**D**	98	**D**	99	**3**	100	**B**	101	**D**	102	**D**	103	**14**	104	**12**
105	**288**	106	**C**	107	**C**	108	**C**	109	**A**	110	**3**	111	**C**	112	**338**
113	**D**	114	**2**	115	**1825**	116	**3**	117	**C**	118	**C**	119	**B**	120	**16**
121	**C**	122	**23**	123	**A**	124	**3**	125	**46**	126	**D**	127	**D**	128	**B**

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