

CHEMISTRY · JEE MAIN

Electrochemistry

Chapter-wise previous year questions, with answer key

128

PYQS

2020–2025

PAPERS

10

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.

Stuck on a question?

Every question has a free step-by-step solution on PrepWiser — tap “Step-by-step solution” under it.

Practise this chapter online with instant answer checking: prepwiser.in/learn · No signup needed to browse

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_{cell}^0
- (B) Exchanging the electrodes at anode and cathode.
- (C) Applying an external opposite potential lower than E_{cell}^0
- (D) Reversing the flow of ions in salt bridge.

Step-by-step solution ► [prepwiser.in/questions/52yAEcZpgA](https://www.prepwiser.in/questions/52yAEcZpgA)

Q2 JEE Main 2024 · 5 Apr · Shift 2

For the electro chemical cell



If $E_{(\text{M}^{2+}/\text{M})}^0 = 0.46\text{V}$ and $E_{(\text{X}/\text{X}^{2-})}^0 = 0.34\text{V}$.

Which of the following is correct?

- (A) $E_{\text{cell}} = 0.80\text{V}$
- (B) $\text{M} + \text{X} \rightarrow \text{M}^{2+} + \text{X}^{2-}$ is a spontaneous reaction
- (C) $E_{\text{cell}} = -0.80\text{V}$
- (D) $\text{M}^{2+} + \text{X}^{2-} \rightarrow \text{M} + \text{X}$ is a spontaneous reaction

Step-by-step solution ► [prepwiser.in/questions/nKfLK66gWV](https://www.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](https://www.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](https://www.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. E_{cell}° cell is dependent on the pressure.

C.

$$\frac{dE^{\theta}_{\text{cell}}}{dT} = \frac{\Delta_r S^{\theta}}{nF}$$

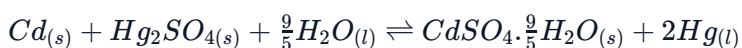
D. A cell is operating reversibly if the cell potential is exactly balanced by an opposing source of potential difference.

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/AZ7UZ398RZ](https://www.prepwiser.in/questions/AZ7UZ398RZ)

Q6 JEE Main 2021 · 31 Aug · Shift 1

Consider the following cell reaction :



The value of E_{cell}° is 4.315 V at 25°C. If $\Delta H^{\circ} = -825.2 \text{ kJ mol}^{-1}$, 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](https://www.prepwiser.in/questions/zreZsxWxEf)

Q7 JEE Main 2020 · 6 Sep · Shift 2

For the given cell :



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

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

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

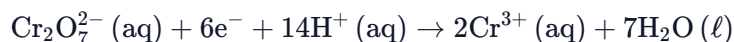
(C) $C_1 = 2C_2$

(D) $C_1 = C_2$

[Step-by-step solution ► prepwiser.in/questions/P-u8YAUJXM](https://www.prepwiser.in/questions/P-u8YAUJXM)

Q8 JEE Main 2025 · 8 Apr · Shift 2

Consider the following half cell reaction



The reaction was conducted with the ratio of $\frac{[\text{Cr}^{3+}]^2}{[\text{Cr}_2\text{O}_7^{2-}]} = 10^{-6}$. The pH value at which the EMF of the half cell will become zero is _____.

(nearest integer value)

[Given: standard half cell reduction potential

$$E_{\text{Cr}_2\text{O}_7^{2-}, \text{H}^+ / \text{Cr}^{3+}}^\circ = 1.33 \text{ V}$$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/QLc7SEJMjE](https://www.prepwiser.in/questions/QLc7SEJMjE)**Q9** JEE Main 2025 · 29 Jan · Shift 1For a $\text{Mg} | \text{Mg}^{2+}(\text{aq}) || \text{Ag}^+(\text{aq}) | \text{Ag}$ the correct Nernst Equation is :

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

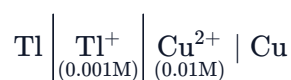
(B) $E_{\text{cell}} = E_{\text{cell}}^\circ - \frac{RT}{2F} \ln \frac{[\text{Mg}^{2+}]}{[\text{Ag}^+]}$

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

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

[Step-by-step solution ► prepwiser.in/questions/cnZO2T3b3w](https://www.prepwiser.in/questions/cnZO2T3b3w)**Q10** JEE Main 2024 · 8 Apr · Shift 2

The emf of cell



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](https://www.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°C ?

(A) 0.5

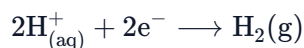
(B) 10^{-14}

(C) 1

(D) 10^{-7} [Step-by-step solution ► prepwiser.in/questions/wb11WDv9qF](https://www.prepwiser.in/questions/wb11WDv9qF)

Q12 JEE Main 2024 · 1 Feb · Shift 1

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



$$[\text{H}^{+}] = 1\text{M}, P_{\text{H}_2} = 2\text{atm}$$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/RgoM4jnoCm](https://www.prepwiser.in/questions/RgoM4jnoCm)

Q13 JEE Main 2024 · 27 Jan · Shift 2

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/30DmZ0u03d](https://www.prepwiser.in/questions/30DmZ0u03d)

Q14 JEE Main 2023 · 13 Apr · Shift 2

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

$$\text{Given : } K_{\text{sp}}\text{Cu}(\text{OH})_2 = 1 \times 10^{-20}$$

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/gGEIHb5Efh](https://www.prepwiser.in/questions/gGEIHb5Efh)

Q15 JEE Main 2023 · 1 Feb · Shift 1

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

Given

$$E_{\text{MnO}_4^{-}|\text{Mn}^{2+}}^{\circ} = 1.54\text{V}, \frac{2.303RT}{F} = 0.059\text{V}$$

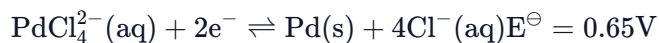
Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/bpqo94eMmh](https://www.prepwiser.in/questions/bpqo94eMmh)

Q16 JEE Main 2023 · 31 Jan · Shift 1

The logarithm of equilibrium constant for the reaction $\text{Pd}^{2+} + 4\text{Cl}^- \rightleftharpoons \text{PdCl}_4^{2-}$ is _____ (Nearest integer)

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



Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/1RFbeM-Mkj](https://www.prepwiser.in/questions/1RFbeM-Mkj)

Q17 JEE Main 2023 · 30 Jan · Shift 2

The electrode potential of the following half cell at 298K

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

Given: $E_{\text{X}^{2+}|\text{X}}^0 = -2.36\text{V}$

$E_{\text{Y}^{2+}|\text{Y}}^0 = +0.36\text{V}$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/uMhygpgYo-](https://www.prepwiser.in/questions/uMhygpgYo-)

Q18 JEE Main 2023 · 30 Jan · Shift 1

Consider the cell



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

Given :

$$\text{Fe}^{3+} + \text{e}^- = \text{Fe}^{2+}, E^\ominus_{\text{Fe}^{3+}, \text{Fe}^{2+} | \text{Pt}} = 0.771$$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/l6buQSU39w](https://www.prepwiser.in/questions/l6buQSU39w)

Q19 JEE Main 2023 · 29 Jan · Shift 2

The equilibrium constant for the reaction

$\text{Zn}(\text{s}) + \text{Sn}^{2+}(\text{aq}) \rightleftharpoons \text{Zn}^{2+}(\text{aq}) + \text{Sn}(\text{s})$ is 1×10^{20} at 298 K. The magnitude of standard electrode potential of Sn/Sn^{2+} if $E_{\text{Zn}^{2+}/\text{Zn}}^\ominus = -0.76\text{V}$ is _____ $\times 10^{-2}\text{V}$. (Nearest integer)

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/FOQpyX2d8Z](https://www.prepwiser.in/questions/FOQpyX2d8Z)

Q20 JEE Main 2023 · 25 Jan · Shift 1

Consider the cell



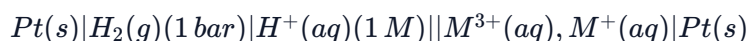
Given $E_{\text{Fe}^{3+}/\text{Fe}^{2+}}^\circ = 0.771 \text{ V}$ and $E_{\text{H}^+/1/2\text{H}_2}^\circ = 0 \text{ V}$, $T = 298 \text{ K}$

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/mpR7ZG0Tt](https://www.prepwiser.in/questions/mpR7ZG0Tt)

Q21 JEE Main 2023 · 25 Jan · Shift 2



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

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

The value of a is _____

Given : $E_{\text{M}^{3+}/\text{M}^+}^\circ = 0.2 \text{ V}$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/Bvd87iCpP](https://www.prepwiser.in/questions/Bvd87iCpP)

Q22 JEE Main 2023 · 24 Jan · Shift 1

At 298 K , a 1 litre solution containing 10 mmol of $\text{Cr}_2\text{O}_7^{2-}$ and 100 mmol of Cr^{3+} shows a pH of 3.0 .

Given : $\text{Cr}_2\text{O}_7^{2-} \rightarrow \text{Cr}^{3+}$; $E^\circ = 1.330 \text{ V}$

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/tNso5cPY5N](https://www.prepwiser.in/questions/tNso5cPY5N)

Q23 JEE Main 2022 · 29 Jul · Shift 2

For a cell,



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

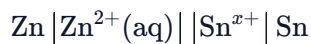
[Given : $E_{\text{Ag}^+/\text{Ag}}^\circ = 0.80 \text{ V}$ and $\frac{2.303RT}{F} = 0.06 \text{ V}$]

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/F2U0VeVpqU](https://www.prepwiser.in/questions/F2U0VeVpqU)

Q24 JEE Main 2022 · 25 Jul · Shift 1

The cell potential for



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

(Given

$$: E_{\text{Zn}^{2+}|\text{Zn}}^{\circ} = -0.763\text{V}, E_{\text{Sn}^{x+}|\text{Sn}}^{\circ} = +0.008\text{V}$$

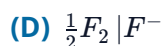
$$\text{and } \frac{2.303RT}{F} = 0.06\text{V})$$

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/wvqmH-sk8o](https://www.prepwiser.in/questions/wvqmH-sk8o)

Q25 JEE Main 2022 · 30 Jun · Shift 1

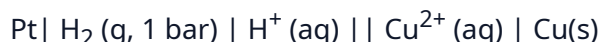
In which of the following half cells, electrochemical reaction is pH dependent?



[Step-by-step solution ► prepwiser.in/questions/mvVeCndgkj](https://www.prepwiser.in/questions/mvVeCndgkj)

Q26 JEE Main 2022 · 29 Jun · Shift 2

The cell potential for the given cell at 298 K



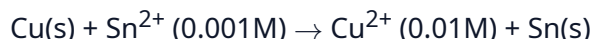
is 0.31 V. The pH of the acidic solution is found to be 3, whereas the concentration of Cu^{2+} is 10^{-x} M. The value of x is _____.

$$(\text{Given} : E_{\text{Cu}^{2+}/\text{Cu}}^{\circ} = 0.34 \text{ V and } \frac{2.303 RT}{F} = 0.06 \text{ V})$$

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/eICKV2ijNU](https://www.prepwiser.in/questions/eICKV2ijNU)

Q27 JEE Main 2022 · 26 Jun · Shift 2



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

$$[\text{Given} : E_{\text{Cu}^{2+}/\text{Cu}}^{\circ} = 0.34 \text{ V} ; E_{\text{Sn}^{2+}/\text{Sn}}^{\circ} = -0.14 \text{ V} ; F = 96500 \text{ C mol}^{-1}]$$

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/NK5UfouXAf](https://www.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 ► prepwisar.in/questions/dHmlydGGdB](https://www.prepwisar.in/questions/dHmlydGGdB)

Q29 JEE Main 2022 · 24 Jun · Shift 1

The cell potential for the following cell



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

(Given : $E_{\text{Cu}^{2+}/\text{Cu}}^0 = 0.34 \text{ V}$ and $\frac{2.303RT}{F} = 0.06 \text{ V}$)

Numerical answer — enter the value.

[Step-by-step solution ► prepwisar.in/questions/cxxHaqp27A](https://www.prepwisar.in/questions/cxxHaqp27A)

Q30 JEE Main 2021 · 26 Aug · Shift 2

For the galvanic cell,



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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisar.in/questions/iOCXmsrp0c](https://www.prepwisar.in/questions/iOCXmsrp0c)

Q31 JEE Main 2021 · 27 Jul · Shift 2

For the cell



the cell potential $E_1 = 0.3095 \text{ V}$

For the cell



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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/mkxgdDjzIY](https://www.prepwiser.in/questions/mkxgdDjzIY)

Q32 JEE Main 2021 · 25 Jul · Shift 1

Consider the cell at 25°C



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)

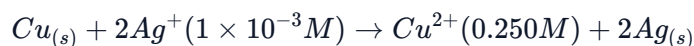
(Given : $E_{\text{Fe}^{3+}/\text{Fe}^{2+}}^0 = 0.77\text{V}$, $E_{\text{Zn}^{2+}/\text{Zn}}^0 = -0.76\text{V}$)

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/kb2PsYg1he](https://www.prepwiser.in/questions/kb2PsYg1he)

Q33 JEE Main 2021 · 22 Jul · Shift 2

Assume a cell with the following reaction



$$E_{\text{cell}}^\ominus = 2.97 \text{ V}$$

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

[Given : $\log 2.5 = 0.3979$, $T = 298 \text{ K}$]

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/eU0yS3In6o](https://www.prepwiser.in/questions/eU0yS3In6o)

Q34 JEE Main 2021 · 26 Feb · Shift 2

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



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

[Given :

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

]

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/qePSDxgpz4](https://www.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 $[\text{Cu}^{2+}]$ and $P_{\text{NO}} = P_{\text{NO}_2}$), 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, $E_{\text{Cu}^{2+}/\text{Cu}}^{\circ} = 0.34 \text{ V}$, $E_{\text{NO}_3^-/\text{NO}}^{\circ} = 0.96 \text{ V}$, $E_{\text{NO}_3^-/\text{NO}_2}^{\circ} = 0.79 \text{ V}$ and at 298 K, $\frac{RT}{F}(2.303) = 0.059$]

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/h7SMshbYkP](https://www.prepwiser.in/questions/h7SMshbYkP)

Q36 JEE Main 2021 · 24 Feb · Shift 2

The magnitude of the change in oxidising power of the $\text{MnO}_4^-/\text{Mn}^{2+}$ couple is $x \times 10^{-4} \text{ V}$, 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 _____. [Given : $\frac{2.303RT}{F} = 0.059$]

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/IY9oIxf8DF](https://www.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° of $17.37 \text{ kJ mol}^{-1}$ at

25°C . The value of E°

cell (in V) is $\times 10^{-2}$.

(1 F = $96,500 \text{ C mol}^{-1}$)

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/XrnNsCMTdb](https://www.prepwiser.in/questions/XrnNsCMTdb)

Q38 JEE Main 2020 · 3 Sep · Shift 1

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



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

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/84CLOmiqJD](https://www.prepwiser.in/questions/84CLOmiqJD)

Q39 JEE Main 2020 · 2 Sep · Shift 2

For the disproportionation reaction



(where K is the equilibrium constant) is

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

Given :

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

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

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

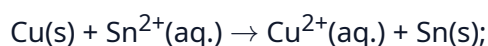
Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/k_0BQheuoG](https://www.prepwiser.in/questions/k_0BQheuoG)

Q40 JEE Main 2020 · 2 Sep · Shift 1

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

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



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

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/L-IvLaVWmL](https://www.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? _____.



($R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$; Temp = 298 K;

oxygen under std. atm. pressure of 1 bar)

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/ITBm9f7RV6](https://www.prepwisser.in/questions/ITBm9f7RV6)

Q42 JEE Main 2020 · 8 Jan · Shift 2

For an electrochemical cell



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

(Given $E_{\text{Sn}^{2+}|\text{Sn}}^0 = -0.14\text{V}$,

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/tIkZTf9NaT](https://www.prepwisser.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 ► prepwisser.in/questions/sNrUbFEDyk](https://www.prepwisser.in/questions/sNrUbFEDyk)

Q44 JEE Main 2025 · 22 Jan · Shift 1

Which of the following electrolyte can be used to obtain $\text{H}_2\text{S}_2\text{O}_8$ 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](https://www.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 $\text{C}_2\text{H}_5\text{COONa}$ is _____.

Numerical answer — enter the value.

Step-by-step solution ► [prepwiser.in/questions/CcyEd9y6dU](https://www.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](https://www.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](https://www.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/20su2aD46O](https://www.prepwiser.in/questions/20su2aD46O)

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](https://www.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](https://www.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 27g mol^{-1} and 35.5g mol^{-1} respectively. Faraday constant = 96500C 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](https://www.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) 0.1g atom of silver | (B) 1 chemical equivalent of silver |
| (C) 1g of silver | (D) 1 electrochemical equivalent of silver |

[Step-by-step solution ► prepwiser.in/questions/vrRW9dt4g7](https://www.prepwiser.in/questions/vrRW9dt4g7)

Q53 JEE Main 2024 · 1 Feb · Shift 2

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/B-2XsdTWnZ](https://www.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](https://www.prepwiser.in/questions/SEe2Zk997X)

Q55 JEE Main 2024 · 30 Jan · Shift 1

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/fq230Uk02d](https://www.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 1.314g. The total charge passed through the solution is _____ $\times 10^{-2}\text{F}$.

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/qgv4bYJR8C](https://www.prepwiser.in/questions/qgv4bYJR8C)

Q57 JEE Main 2024 · 29 Jan · Shift 1

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

(Atomic mass of zinc = 65.4amu)

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/gTW9thBUt1](https://www.prepwiser.in/questions/gTW9thBUt1)

Q58 JEE Main 2024 · 27 Jan · Shift 1

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/BssRQwd3CT](https://www.prepwiser.in/questions/BssRQwd3CT)

Q59 JEE Main 2023 · 13 Apr · Shift 1

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/toJuHtsNlz](https://www.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/m3dTI_Uvgu](https://www.prepwiser.in/questions/m3dTI_Uvgu)

Q61 JEE Main 2022 · 26 Jul · Shift 1

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/5WhAJqsUOc](https://www.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 at STP is _____ cm^3 . (Nearest integer)

[Given : Faraday constant $F = 96500 \text{ C mol}^{-1}$ 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](https://www.prepwiser.in/questions/cyVNoMSSI1)

Q63 JEE Main 2022 · 28 Jun · Shift 1

The quantity of electricity in Faraday needed to reduce 1 mol of $\text{Cr}_2\text{O}_7^{2-}$ to Cr^{3+} is _____.

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/5HbmdrxvT2](https://www.prepwiser.in/questions/5HbmdrxvT2)

Q64 JEE Main 2022 · 25 Jun · Shift 2

A solution of $\text{Fe}_2(\text{SO}_4)_3$ 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 : $1 F = 96500 \text{ C mol}^{-1}$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/H95Ja5p5Dv](https://www.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) $\text{HO}_3\text{SOOSO}_3\text{H}$

(C) $\text{HO}_2\text{SOSO}_2\text{H}$

(D) $\text{HO}_3\text{SOSO}_3\text{H}$

[Step-by-step solution ► prepwiser.in/questions/v30GPmtEJ6](https://www.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.



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

(Molar mass of $\text{KClO}_3 = 122.6 \text{ g mol}^{-1}$, $F = 96500 \text{ C}$)

Numerical answer — enter the value.

Step-by-step solution ► [prepwiser.in/questions/6OZpAy4xaC](https://www.prepwiser.in/questions/6OZpAy4xaC)

Q67 JEE Main 2021 · 26 Feb · Shift 1

Consider the following reaction



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](https://www.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



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 : $F = 96,500 \text{ C mol}^{-1}$; molar mass of $\text{KClO}_3 = 122 \text{ g mol}^{-1}$)

Numerical answer — enter the value.

Step-by-step solution ► [prepwiser.in/questions/_jjdcq8XNs](https://www.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

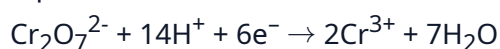
$$[E_{\text{Ag}^+/\text{Ag}}^0 = 0.80 \text{ V}, E_{\text{Au}^+/\text{Au}}^0 = 1.69 \text{ V}]$$

- (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](https://www.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



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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/T-CtiMBkPS](https://www.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 $\text{AgNO}_3(\text{aq})$ 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](https://www.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 $870.0 \text{ m}\Omega\text{m}$. The molar conductivity of the solution will be _____ $\times 10^2 \text{ mS dm}^2 \text{ mol}^{-1}$. (Nearest integer)

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/uwC4viUmJI](https://www.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) $\text{Scm}^2 \text{mol}^{-3/2} \text{L}$
- (B) $\text{Scm}^2 \text{mol}^{-3/2} \text{L}^{-1/2}$
- (C) $\text{Scm}^2 \text{mol}^{-1} \text{L}^{1/2}$
- (D) $\text{Scm}^2 \text{mol}^{-3/2} \text{L}^{1/2}$

[Step-by-step solution ► prepwiser.in/questions/zr5jOrZV39](https://www.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](https://www.prepwiser.in/questions/8gMK6U39SF)

Q75 JEE Main 2024 · 31 Jan · Shift 2

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

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

The number of conductors among the materials is _____.

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/p8z04Ns9Qg](https://www.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](https://www.prepwiser.in/questions/Lw1igx-UUZ)

Q77 JEE Main 2023 · 10 Apr · Shift 2

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/FhpYSHzBb0](https://www.prepwiser.in/questions/FhpYSHzBb0)

Q78 JEE Main 2023 · 31 Jan · Shift 2

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

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/Pj_eyHIgQ7](https://www.prepwiser.in/questions/Pj_eyHIgQ7)

Q79 JEE Main 2022 · 29 Jul · Shift 1

Resistance of a conductivity cell (cell constant 129 m^{-1}) filled with 74.5 ppm solution of KCl is $100\ \Omega$ (labelled as solution 1). When the same cell is filled with KCl solution of 149 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 g mol^{-1} .

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/d-zOqgn182](https://www.prepwisser.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 ► prepwisser.in/questions/xngTQx1QyB](https://www.prepwisser.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 $3 \times 10^{-5}\text{ S m}^{-1}$, the limiting molar conductivity of the solution is $x \times 10^{-3}\text{ S m}^2\text{ mol}^{-1}$. The value of x is _____.

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/5HnxYvFEXm](https://www.prepwisser.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 $1750\ \Omega$. If the conductivity of 0.01 M KCl solution at 298 K is $0.152 \times 10^{-3}\text{ S cm}^{-1}$, then the cell constant of the conductivity cell is _____ $\times 10^{-3}\text{ cm}^{-1}$.

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/cYUXGoG-C7](https://www.prepwisser.in/questions/cYUXGoG-C7)

Q83 JEE Main 2021 · 1 Sep · Shift 2

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/qSYlhG3M8v](https://www.prepwisser.in/questions/qSYlhG3M8v)

Match List - I with List - II

List - I (Parameter)	List - II (Unit)
(a) Cell constant	(i) $S\,cm^2\,mol^{-1}$
(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](https://www.prepwiser.in/questions/th305TpyG4)

The resistance of a conductivity cell with cell constant $1.14\,cm^{-1}$, containing $0.001\,M$ KCl at $298\,K$ is $1500\,\Omega$. 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](https://www.prepwiser.in/questions/7BO2vHdM6B)

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](https://www.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](https://www.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 _____ $\times 10^{-2} \text{ S m}^{-1}$. (Round off to the Nearest Integer).

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/nVtva9J7U7](https://www.prepwiser.in/questions/nVtva9J7U7)

Q89 JEE Main 2021 · 16 Mar · Shift 2

A 5.0 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 _____ $\text{mS m}^2 \text{ mol}^{-1}$. (Round off to the Nearest Integer).

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/fZzdX8zQf_](https://www.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) $C_{\text{NaCl}}(T_2) > C_{\text{NaCl}}(T_1)$ for $T_2 > T_1$
- (C) $C_{\text{BaSO}_4}(T_2) > C_{\text{BaSO}_4}(T_1)$ for $T_2 > T_1$
- (D) $C_{\text{NaCl}} \gg C_{\text{BaSO}_4}$ at a given T

[Step-by-step solution ► prepwiser.in/questions/qjU3XyjbvGU](https://www.prepwiser.in/questions/qjU3XyjbvGU)

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](https://www.prepwiser.in/questions/VzZVpsogD9)

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/99yLFfHyO](https://www.prepwiser.in/questions/99yLFfHyO)

Q93 JEE Main 2025 · 3 Apr · Shift 2

The standard cell potential ($E_{\text{cell}}^\ominus$) 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 ($E_{\text{O}_2/\text{H}_2\text{O}}^\ominus$) 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 ($E_{\text{CO}_2/\text{CH}_3\text{OH}}^\ominus$) is 19 mV
(D) Reduction of methanol takes place at the cathode.

Step-by-step solution ► [prepwiser.in/questions/tZUi6IscuK](https://www.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 - $\text{HgO} + \text{C}$
(B) Hearing aids	(II) Hydrogen fuel cell
(C) Inverters	(III) Anode - Zn; Cathode - Carbon
(D) Apollo space ship	(IV) Anode - Pb; Cathode - $\text{Pb} \mid \text{PbO}_2$

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-](https://www.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](https://www.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](https://www.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](https://www.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, PbSO_4 on anode is converted into PbO_2
- B. During charging of battery, PbSO_4 on cathode is converted into PbO_2
- C. Lead storage battery consists of grid of lead packed with 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](https://www.prepwiser.in/questions/toUUKoMGAO)

Q99 JEE Main 2025 · 4 Apr · Shift 2

The molar conductance of an infinitely dilute solution of ammonium chloride was found to be $185 \text{ Scm}^2 \text{ mol}^{-1}$ and the ionic conductance of hydroxyl and chloride ions are 170 and $70 \text{ Scm}^2 \text{ mol}^{-1}$, respectively. If molar conductance of 0.02 M solution of ammonium hydroxide is $85.5 \text{ Scm}^2 \text{ mol}^{-1}$, 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/ROIWBqwuRo](https://www.prepwiser.in/questions/ROIWBqwuRo)

Q100 JEE Main 2025 · 3 Apr · Shift 1

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

- (A) $\text{H}^+ > \text{Na}^+ > \text{K}^+ > \text{Ca}^{2+} > \text{Mg}^{2+}$
 (B) $\text{H}^+ > \text{Ca}^{2+} > \text{Mg}^{2+} > \text{K}^+ > \text{Na}^+$
 (C) $\text{Mg}^{2+} > \text{H}^+ > \text{Ca}^{2+} > \text{K}^+ > \text{Na}^+$
 (D) $\text{H}^+ > \text{Na}^+ > \text{Ca}^{2+} > \text{Mg}^{2+} > \text{K}^+$

Step-by-step solution ► [prepwiser.in/questions/QK82kXn_OG](https://www.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](https://www.prepwiser.in/questions/QhQXFxLvjN)

Q102 JEE Main 2024 · 5 Apr · Shift 1

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

- (A) $187 \text{ Scm}^2 \text{ mol}^{-1}$
 (B) $260 \text{ Scm}^2 \text{ mol}^{-1}$
 (C) $65 \text{ Scm}^2 \text{ mol}^{-1}$
 (D) $130 \text{ Scm}^2 \text{ mol}^{-1}$

Step-by-step solution ► [prepwiser.in/questions/ytBC9P_8w6](https://www.prepwiser.in/questions/ytBC9P_8w6)

Q103 JEE Main 2022 · 27 Jun · Shift 1

The limiting molar conductivities of NaI, NaNO₃ and AgNO₃ are 12.7, 12.0 and 13.3 mS m² mol⁻¹, respectively (all at 25°C). The limiting molar conductivity of AgI at this temperature is _____ mS m² mol⁻¹.

Numerical answer — enter the value.

[Step-by-step solution ► prepwisar.in/questions/gjnIuPqM-4](https://www.prepwisar.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 $\Lambda_m^0(\text{HA}) = 190$ S cm² 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 ► prepwisar.in/questions/IEtZS82-m](https://www.prepwisar.in/questions/IEtZS82-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 cm² mol⁻¹ respectively. The molar conductivity at infinite dilution of barium sulphate is _____ S cm² mol⁻¹. (Round off to the Nearest Integer).

Numerical answer — enter the value.

[Step-by-step solution ► prepwisar.in/questions/RV77Y6N75u](https://www.prepwisar.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(NO₃)₂, AgNO₃, Hg₂(NO₃)₂, Mg(NO₃)₂ are electrolysed using inert electrodes. Given: $E^0_{\text{Ag}^+/\text{Ag}} = 0.80$ V, $E^0_{\text{Hg}_2^{2+}/\text{Hg}} = 0.79$ V, $E^0_{\text{Cu}^{2+}/\text{Cu}} = 0.24$ V and $E^0_{\text{Mg}^{2+}/\text{Mg}} = -2.37$ 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 ► prepwisar.in/questions/7PRnow9UAX](https://www.prepwisar.in/questions/7PRnow9UAX)

Q107 JEE Main 2025 · 29 Jan · Shift 1

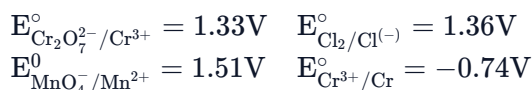
The standard reduction potential values of some of the p-block ions are given below. Predict the one with the strongest oxidising capacity.

- (A) $E_{\text{Sn}^{4+}/\text{Sn}^{2+}}^{\circ} = +1.15 \text{ V}$
 (B) $E_{\text{Al}^{3+}/\text{Al}}^{\circ} = -1.66 \text{ V}$
 (C) $E_{\text{Pb}^{4+}/\text{Pb}^{2+}}^{\circ} = +1.67 \text{ V}$
 (D) $E_{\text{Tl}^{3+}/\text{Tl}}^{\circ} = +1.26 \text{ V}$

Step-by-step solution ► [prepwisar.in/questions/HNA9tNZyor](https://www.prepwisar.in/questions/HNA9tNZyor)

Q108 JEE Main 2025 · 24 Jan · Shift 2

Based on the data given below :



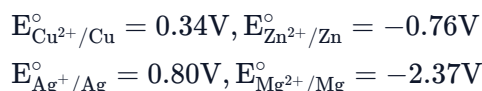
the strongest reducing agent is :

- (A) Cl^- (B) MnO_4^-
 (C) Cr (D) Mn^{2+}

Step-by-step solution ► [prepwisar.in/questions/1jzQMRV0fg](https://www.prepwisar.in/questions/1jzQMRV0fg)

Q109 JEE Main 2025 · 23 Jan · Shift 2

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



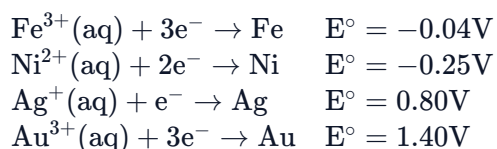
Which one of the following cells gives the most negative value of ΔG° ?

- (A) $\text{Zn} | \text{Zn}^{2+}(1\text{M}) || \text{Ag}^+(1\text{M}) | \text{Ag}$
 (B) $\text{Ag} | \text{Ag}^+(1\text{M}) | \text{Mg}^{2+}(1\text{M}) | \text{Mg}$
 (C) $\text{Zn} | \text{Zn}^{2+}(1\text{M}) | \text{Mg}^{2+}(1\text{M}) | \text{Mg}$
 (D) $\text{Cu} | \text{Cu}^{2+}(1\text{M}) | \text{Ag}^+(1\text{M}) | \text{Ag}$

Step-by-step solution ► [prepwisar.in/questions/aRJGrvPtts](https://www.prepwisar.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 :



Consider the given electrochemical reactions,

The number of metal(s) which will be oxidized by $\text{Cr}_2\text{O}_7^{2-}$, in aqueous solution is _____.

Numerical answer — enter the value.

Step-by-step solution ► [prepwisar.in/questions/_6gEAW4y6_](https://www.prepwisar.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 ► prepwisser.in/questions/EYr49Nm4Tm](https://www.prepwisser.in/questions/EYr49Nm4Tm)

Q112 JEE Main 2024 · 1 Feb · Shift 2

Consider the following redox reaction :



The standard reduction potentials are given as below (E_{red}^0) :

$$E_{\text{MnO}_4^-/\text{Mn}^{2+}}^0 = +1.51\text{V}$$

$$E_{\text{CO}_2/\text{H}_2\text{C}_2\text{O}_4}^0 = -0.49\text{V}$$

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/R4k7aoVGwV](https://www.prepwisser.in/questions/R4k7aoVGwV)

Q113 JEE Main 2024 · 30 Jan · Shift 2

Reduction potential of ions are given below:

$$\begin{array}{ccc} \text{ClO}_4^- & \text{IO}_4^- & \text{BrO}_4^- \\ E^\circ = 1.19\text{V} & E^\circ = 1.65\text{V} & E^\circ = 1.74\text{V} \end{array}$$

The correct order of their oxidising power is :

- (A) $\text{IO}_4^- > \text{BrO}_4^- > \text{ClO}_4^-$
(B) $\text{BrO}_4^- > \text{ClO}_4^- > \text{IO}_4^-$
(C) $\text{ClO}_4^- > \text{IO}_4^- > \text{BrO}_4^-$
(D) $\text{BrO}_4^- > \text{IO}_4^- > \text{ClO}_4^-$

[Step-by-step solution ► prepwisser.in/questions/mErYsMxicy](https://www.prepwisser.in/questions/mErYsMxicy)

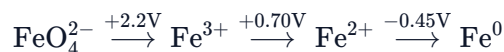
Q114 JEE Main 2023 · 11 Apr · Shift 1

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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/Ca5nbeV_Qb](https://www.prepwisser.in/questions/Ca5nbeV_Qb)

Q115 JEE Main 2023 · 10 Apr · Shift 1



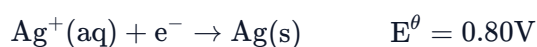
$E^\theta_{\text{FeO}_4^{2-}/\text{Fe}^{2+}}$ is $x \times 10^{-3}$ V. The value of x is _____

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/h1GbGKdLML](https://www.prepwiser.in/questions/h1GbGKdLML)

Q116 JEE Main 2023 · 6 Apr · Shift 2

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



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

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/1KlrNIC6fD](https://www.prepwiser.in/questions/1KlrNIC6fD)

Q117 JEE Main 2023 · 6 Apr · Shift 1

The standard electrode potential of 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](https://www.prepwiser.in/questions/bmFGX11XF9)

Q118 JEE Main 2023 · 29 Jan · Shift 1

The standard electrode potential ($\text{M}^{3+}/\text{M}^{2+}$) 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 H_2 from a dilute acid are :

- (A) Mn^{2+} and Co^{2+}
(B) V^{2+} and Mn^{2+}
(C) V^{2+} and Cr^{2+}
(D) Cr^{2+} and Co^{2+}

[Step-by-step solution ► prepwiser.in/questions/5yL_4P-0uI](https://www.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](https://www.prepwiser.in/questions/YUM_6BNzG1)

Q120 JEE Main 2022 · 28 Jun · Shift 2

For the given reactions



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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/ZqDHyyLJzT](https://www.prepwisser.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

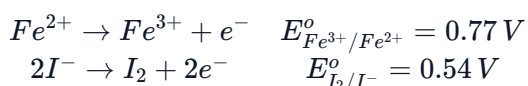
(C) Cu

(D) Zn

[Step-by-step solution ► prepwisser.in/questions/L4ijtInh9J](https://www.prepwisser.in/questions/L4ijtInh9J)

Q122 JEE Main 2022 · 25 Jun · Shift 1

In a cell, the following reactions take place



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

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/eqk0JfRhsg](https://www.prepwisser.in/questions/eqk0JfRhsg)

Q123 JEE Main 2022 · 25 Jun · Shift 2

The correct order of reduction potentials of the following pairs is

A. $\text{Cl}_2/\text{Cl}^{-}$

B. I_2/I^{-}

C. Ag^{+}/Ag

D. Na^{+}/Na

E. Li^{+}/Li

Choose the correct answer from the options given below.

(A) $\text{A} > \text{C} > \text{B} > \text{D} > \text{E}$

(B) $\text{A} > \text{B} > \text{C} > \text{D} > \text{E}$

(C) $\text{A} > \text{C} > \text{B} > \text{E} > \text{D}$

(D) $\text{A} > \text{B} > \text{C} > \text{E} > \text{D}$

[Step-by-step solution ► prepwisser.in/questions/D5NmWdTGaE](https://www.prepwisser.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

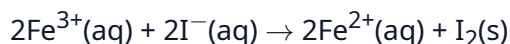
The total number of above properties that affect the reduction potential is _____ (Integer answer)

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/7jfjkDbg7Q](https://www.prepwisser.in/questions/7jfjkDbg7Q)

Q125 JEE Main 2021 · 18 Mar · Shift 1

For the reaction



the magnitude of the standard molar Gibbs free energy change, $\Delta_r G_m^{\circ} = -$ _____ kJ (Round off to the Nearest Integer).

$$\left[\begin{array}{ll} E_{\text{Fe}^{2+}/\text{Fe}(\text{s})}^{\circ} = -0.440\text{V}; & E_{\text{Fe}^{3+}/\text{Fe}(\text{s})}^{\circ} = -0.036\text{V} \\ E_{\text{I}_2/2\text{I}^{-}}^{\circ} = 0.539\text{V}; & F = 96500\text{C} \end{array} \right]$$

Numerical answer — enter the value.

[Step-by-step solution ► prepwisser.in/questions/YoFf8H-OyB](https://www.prepwisser.in/questions/YoFf8H-OyB)

Q126 JEE Main 2020 · 7 Jan · Shift 1

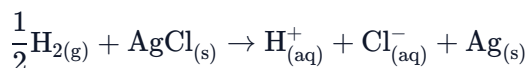
Given that the standard potentials (E°) of Cu^{2+}/Cu and Cu^{+}/Cu are 0.34 V and 0.522 V respectively, the E° of $\text{Cu}^{2+}/\text{Cu}^{+}$:

- (A) - 0.182 V
- (B) - 0.158 V
- (C) 0.182 V
- (D) +0.158 V

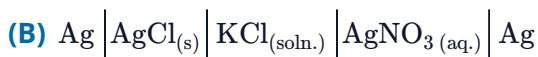
[Step-by-step solution ► prepwisser.in/questions/_tCDTXOShH](https://www.prepwisser.in/questions/_tCDTXOShH)

Q127 JEE Main 2024 · 8 Apr · Shift 2

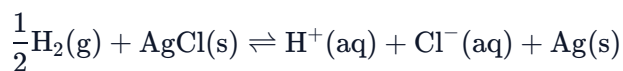
The reaction;



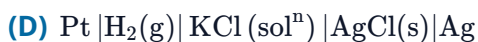
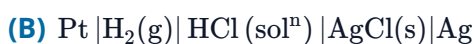
occurs in which of the following galvanic cell :

[Step-by-step solution ► prepwiser.in/questions/LY8KkNa5w4](https://www.prepwiser.in/questions/LY8KkNa5w4)**Q128** JEE Main 2023 · 8 Apr · Shift 1

The reaction



occurs in which of the given galvanic cell.

[Step-by-step solution ► prepwiser.in/questions/B_vuFjCSVb](https://www.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

Want the next chapter?

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