

Parishram (2025)

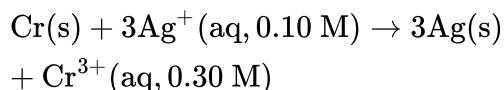
Physical Chemistry

Electrochemistry

DPP: 4

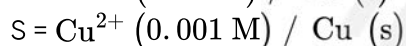
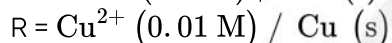
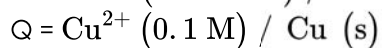
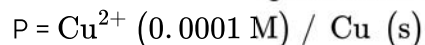
Q1 The measured voltage for the reaction with the indicated concentration is 1.50 V.

Calculate E° .



- (A) 1.35 (B) 1.40
(C) 1.65 (D) 1.55

Q2 Consider the following four electrodes:



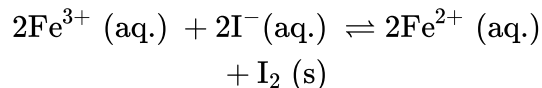
If the standard electrode potential of Cu^{2+}/Cu is + 0.34 V, the reduction potentials (in volts) of the above electrodes follow the order:

- (A) $\text{P} > \text{S} > \text{R} > \text{Q}$
(B) $\text{P} > \text{S} > \text{R} > \text{Q}$
(C) $\text{S} > \text{R} > \text{Q} > \text{P}$
(D) $\text{Q} > \text{R} > \text{S} > \text{P}$

Q3 The value of equilibrium constant for feasible cell reaction is

- (A) < 1 (B) Zero
(C) $= 1$ (D) > 1

Q4 The equilibrium constant of the following redox reaction at 298 K is 1×10^8



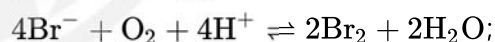
If the standard reduction potential of iodine becoming iodide is +0.54 V. What is the standard reduction potential of $\text{Fe}^{3+}/\text{Fe}^{2+}$?

- (A) +1.006 V
(B) -1.006 V
(C) +0.77 V
(D) -0.77 V

Q5 The EMF of the cell: $\text{Zn} | \text{Zn}^{2+}(0.01\text{M}) || \text{Fe}^{2+}(0.001\text{M}) | \text{Fe}$ at 298 K is 0.2905 V, then the value of equilibrium constant for the cell reaction is

- (A) $e^{\frac{0.32}{0.0295}}$
(B) $10^{\frac{0.32}{0.0295}}$
(C) $10^{\frac{0.26}{0.0295}}$
(D) $10^{\frac{0.32}{0.0591}}$

Q6 For the cell reaction:



$E^\circ = 0.18 \text{ V}$. The value of $(\log K_C)$ at 298 K is $[2.303 RT/F = 0.06]$

- (A) 12 (B) 6
(C) 18 (D) 3



Answer Key

Q1 (D)

Q2 (D)

Q3 (D)

Q4 (C)

Q5 (B)

Q6 (A)



Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Video Solution:



Q2 Video Solution:



Q3 Video Solution:



Q4 Video Solution:



Q5 Video Solution:



Q6 Video Solution:



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