

Electrochemistry

1. The charge required for the reduction of 1 mol of MnO_4^- to MnO_2 is

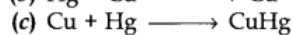
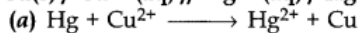
- (a) 1 F
- (b) 3 F
- (c) 5 F
- (d) 6 F

▼ **Answer**

Answer: b

2. The cell reaction of the galvanic cell.

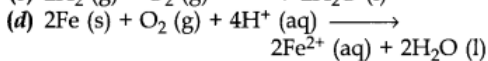
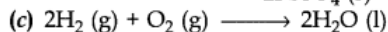
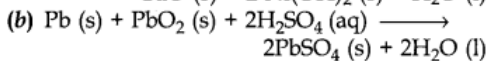
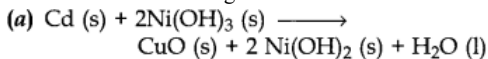
$\text{Cu(s)} / \text{Cu}^{2+}(\text{aq}) // \text{Hg}^{2+}(\text{aq}) / \text{Hg(l)}$ is



▼ **Answer**

Answer: d

3. Which of the following reaction is used to make fuel cell?



▼ **Answer**

Answer: c

4. If limiting molar conductivity of Ca^{2+} and Cl^- are 119.0 and 76.3 $\text{S cm}^2 \text{mol}^{-1}$, then the value of limiting molar conductivity of CaCl_2 will be

- (a) 195.3 $\text{S cm}^2 \text{mol}^{-1}$
- (b) 271.6 $\text{S cm}^2 \text{mol}^{-1}$
- (c) 43.3 $\text{S cm}^2 \text{mol}^{-1}$
- (d) 314.3 $\text{S cm}^2 \text{mol}^{-1}$.

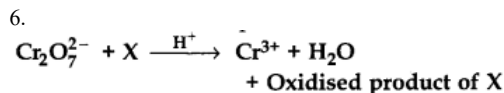
▼ **Answer**

Answer: b

5. NH_4NO_3 is used in salt bridge because
- (a) it forms a jelly like material with agar-agar.
 - (b) it is a weak electrolyte.
 - (c) it is a good conductor of electricity.
 - (d) the transport number of NH_4^+ and NO_3^- ions are almost equal.

▼ Answer

Answer: d



X in the above reaction cannot be

- (a) $\text{Cr}_2\text{O}_7^{2-}$
- (b) Fe^{2+}
- (c) SO_4^{2-}
- (d) S^{2-}

▼ Answer

Answer: b

7. The reaction, $3\text{ClO}^- (\text{aq}) \rightarrow \text{ClO}_3^- (\text{aq}) + 2\text{Cl}^- (\text{aq})$ is an example of
- (a) Oxidation reaction
 - (b) Reduction reaction
 - (c) Disproportionation reaction
 - (d) Decomposition reaction

▼ Answer

Answer: c

8. The emf of the cell:
 $\text{Ni} / \text{Ni}^{2+} (1.0 \text{ M}) // \text{Au}^{3+} (1.0 \text{ M}) / \text{Au}$ ($E^\circ = -0.25 \text{ V}$ for Ni^{2+}/Ni ; $E^\circ = 1.5 \text{ V}$ for Au^{3+}/Au) is
- (a) 1.25 V
 - (b) -1.25 V
 - (c) 1.75 V
 - (d) 2.0 V

▼ Answer

Answer: c

9. The standard emf of a galvanic cell involving cell reaction with $n = 2$ is found to be 0.295 V at 25°C. The equilibrium constant of the reaction would be
- (a) 1.0×10^{10}
 - (b) 2.0×10^{11}
 - (c) 4.0×10^{12}
 - (d) 1.0×10^2
- [Given $F = 96500 \text{ (mol}^{-1}\text{)}$; $R = 8.314 \text{ JK}^{-1} \text{ mol}^{-1}$]

▼ Answer

Answer: a

10. If $E^\circ_{\text{Fe}^{2+}/\text{Fe}} = -0.441 \text{ V}$ and $E^\circ_{\text{Fe}^{2+}/\text{Fe}^{3+}} = 0.771 \text{ V}$, the standard EMF of the reaction,
 $\text{Fe} + 2\text{Fe}^{3+} \rightarrow 3\text{Fe}^{2+}$ will be
- (a) 1.212 V
 - (b) 0.111 V
 - (c) 0.330 V
 - (d) 1.653 V

▼ Answer

Answer: a