# Electrochemistry — Practice Test

**Northwest Territories Chemistry 12 (MCH--12) • 10 questions**

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **Given $E°(Ni^{2+}/Ni) = -0.25$ V and $E°(Cu^{2+}/Cu) = +0.34$ V, the cell potential for $Ni + Cu^{2+} \rightarrow Ni^{2+} + Cu$, in volts, is**

- **A** 0.09
- **B** 0.59
- **C** 0.34
- **D** 0.84

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2 **Given $E°(Mg^{2+}/Mg) = -2.37$ V and $E°(Zn^{2+}/Zn) = -0.76$ V, the cell potential for $Mg + Zn^{2+} \rightarrow Mg^{2+} + Zn$, in volts, is**

A 1.61

B 2.37

C 3.13

D 0.76

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3 **A cell with a negative standard cell potential under standard conditions is**

A spontaneous

B at equilibrium

C nonspontaneous, and needs an external power supply to run

D a galvanic cell

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4 **The species with the larger, more positive, reduction potential is the one that is**

A more easily reduced

B more easily oxidized

C the stronger reducing agent

D never reduced

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5 **In a zinc-copper galvanic cell, the zinc electrode**

A gains mass as copper plates onto it

B does not change in mass

C gains mass as zinc ions plate onto it

D loses mass as zinc metal is oxidized

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6 **In a zinc-copper galvanic cell, the copper electrode**

- A loses mass as copper metal is oxidized
- B gains mass as copper metal plates onto it
- C does not change in mass
- D gains mass as zinc plates onto it

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7 **Electroplating is used to**

- A remove metal from an object
- B generate electricity from heat
- C coat an object with a thin layer of metal
- D purify water by boiling

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**8** **During electrolysis, the external power supply forces**

- **A** a nonspontaneous redox reaction to occur
- **B** a spontaneous reaction to stop
- **C** electrons to flow from cathode to anode
- **D** ions to stop moving

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**9** **Which equation is a balanced redox half-reaction for the oxidation of aluminium**

- **A** $Al + 3e^- \rightarrow Al^{3+}$
- **B** $Al \rightarrow Al^{3+} + e^-$
- **C** $Al \rightarrow Al^{3+} + 3e^-$
- **D** $Al^{3+} + 3e^- \rightarrow Al$

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**10** **Which equation is a balanced redox half-reaction for the reduction of silver ions**

A $Ag \rightarrow Ag^{+} + e^{-}$

B $Ag^{+} \rightarrow Ag + e^{-}$

C $Ag^{+} + 2e^{-} \rightarrow Ag$

D $Ag^{+} + e^{-} \rightarrow Ag$

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## ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **5.** | D | **9.** | C |
| **2.** | A | **6.** | B | **10.** | D |
| **3.** | C | **7.** | C | | |
| **4.** | A | **8.** | A | | |

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