Quiz Submissions - Unit 5-Electrochemistry Quiz MC

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Attempt 1

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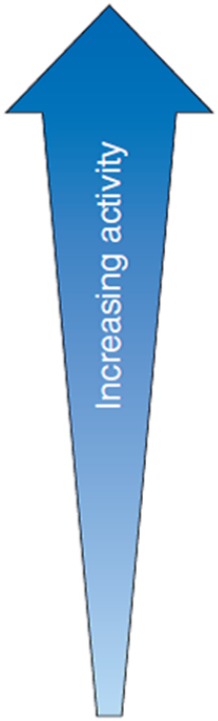
Submission View

Your quiz has been submitted successfully.

Multiple Choice Questions

Table 13.5 Activity Series

Metals	Ion Found
Lithium	Li^+
Potassium	K^+
Calcium	Ca^{2+}
Sodium	Na^+
Magnesium	Mg^{2+}
Aluminum	Al^{3+}
Zinc	Zn^{2+}
Chromium	Cr^{3+}
Iron	Fe^{2+}
Nickel	Ni^{2+}
Tin	Sn^{2+}
Lead	Pb^{2+}
HYDROGEN*	H^+
Copper	Cu^{2+}
Silver	Ag^+
Platinum	Pt^{2+}
Gold	Au^{3+}



*Hydrogen is in capital letters because the activities of the metals are often determined in relation to the activity of hydrogen.

Question 1 **1 / 1 point**

What is the change in oxidation number of an atom of chromium in the half-reaction $CrO_3^{2-}(aq) \rightarrow Cr_2O_7^{2-}(aq)$?

- a) an decrease of 3
- b) a increase of 1
- ✓ c) a increase of 2

d) an decrease of 1

e) an decrease of 2

Question 2 **1 / 1 point**

Identify the oxidizing agent in the reaction:
$2Fe(s) + O_2(g) + 2\,H_2O(el) \rightarrow 2Fe(OH)_2(s)$

a) $Fe(OH)_2(s)$

b) $H_2O(el)$

✔ c) $O_2(g)$

d) Fe(s)

e) Fe (s) and $O_2(g)$

Question 3 **1 / 1 point**

Which of the following represents a balanced redox reaction for the following in acidic conditions?
$Cd(s) + NO_3^-(aq) \rightarrow Cd^{2+}(aq) + NO(g)$

✔ a) $8H^+ + 3Cd(s) + 2NO_3^-(aq) \rightarrow 3Cd^{2+}(aq) + 2NO(g) + 4H_2O(el)$

b) $Cd(s) + NO_3^-(aq) \rightarrow Cd^{2+}(aq) + NO(g) + 2H_2O$

c) $4H^+ + Cd(s) + NO_3^-(aq) \rightarrow Cd^{2+}(aq) + NO(g) + 2H_2O$

d) $4H^+ + Cd(s) + NO_3^-(aq) + 2e^- \rightarrow Cd^{2+}(aq) + NO(g) + 2H_2O$

e) $8H^+ + 3Cd(s) + 3NO_3^-(aq) \rightarrow 3Cd^{2+}(aq) + 3NO(g) + 4H_2O(el)$

Question 4 **1 / 1 point**

Which of the following is a stronger reducing agent than Mg(s)?

✔ a) Ca(s)

b) Fe(s)

c) Cu(s)

d) Sn(s)

e) Pt(s)

Question 5 **1 / 1 point**

What must be added to the following half-reaction for it to be balanced?

$10H^+ + NO_3^-(aq) + 8e^- \rightarrow NH_4^+(aq)$

a) 10 hydroxide ions to the left side

b) 1 water molecule to the left side

c) 3 water molecules to the left side

✓ d) 3 water molecules on the right side

e) 1 water molecule to the left side

Question 6 **1 / 1 point**

For the unbalanced reaction equation $MnO_4^-(aq) + Cl^-(aq) \rightarrow Mn^{2+}(aq) + Cl_2(g)$,

a) when charge is balanced, the total number of electrons transferred is 8

b) manganese is the reducing agent

c) chlorine is the oxidizing agent

d) 10 hydrogen ions must be added to balance the equation

✓ e) 8 water molecules must be added to balance the equation

Question 7 **1 / 1 point**

In the reaction: $KNO_3(aq) + PbSO_4(aq) \rightarrow Pb(NO_3)_2(aq) + K_2SO_4(aq)$, what is the reducing agent?

a) $KNO_3(aq)$

b) $PbSO_4(aq)$

c) $Pb(NO_3)_2(aq)$

d) $K_2SO_4(aq)$

✓ e) there is no reducing agent

Question 8 **1 / 1 point**

Which of the following reactions is an example of a disproportionation reaction?

a) $Fe(s) + CuSO_4(aq) \rightarrow FeSO_4(aq) + Cu(s)$

✓ b) $3Cl_2(g) + 6OH^-(aq) \rightarrow 5Cl^-(aq) + ClO_3^-(aq) + 3H_2O(el)$

c) $K(s) + Cl_2(g) \rightarrow KCl(aq)$

d) $NO_3^-(aq) + NH_3(g) \rightarrow 2NO_2^-(s)$

e) $PbCl_2(s) \rightarrow Pb(s) + Cl_2(g)$

Question 9 **1 / 1 point**

In the reaction $Al(s) + Ca(NO_3)_2\,(aq) \rightarrow Al(NO_3)_3\,(aq) + Ca(s)$
which element loses electrons in the process?

a) oxygen

b) nitrogen

c) calcium

✓ d) aluminum

e) no element loses electrons

Question 10 **1 / 1 point**

For the unbalanced equation $Zn(s) + HNO_3(aq) \rightarrow Zn(NO_3)_2(aq) + NH_4NO_3(aq)$, what are the oxidation numbers of nitrogen on the reactant and product sides of the equation, in order?

a) 0, +5, +2, −3

b) 0, +2

c) -5, -5, +3, -5

✔ d) +5, +5, –3, +5

e) +5, +2, –3, +5

Attempt Score: 10 / 10 - 100 %

Overall Grade (highest attempt)**:** 10 / 10 - 100 %

Done