NI · Extra practice

Original diploma-style practice | Items 1-2

Extra practice for this lesson. Original questions, not released diploma items. Select one option for multiple choice; other tasks state the required response.

Use the givens and conditions in each prompt. Enter the requested count, coefficient, oxidation number or potential with the stated unit and precision.

NI-D01 · Numerical response

One unit of $Al(NO_3)_3(aq)$ breaks into ions in water. How many ions form in total? Enter an integer.

Response: _____

NI-D02 · Numerical response

How many Cl^- ions are written in a total ionic equation for $2FeCl_3(aq)$? Enter an integer.

Response: _____

NI · Extra practice

Original diploma-style practice | Items 3-4

NI-D03 · Multiple choice

Which substance is written as separate ions in a total ionic equation?

A. Cu(s)
B. $H_2O(l)$
C. $NaNO_3(aq)$
D. AgBr(s)

Response: _____

NI-D04 · Multiple choice

Given: $Sn(s) + 2AgNO_3(aq) \rightarrow Sn(NO_3)_2(aq) + 2Ag(s)$. Which ion is the spectator ion?

A. Ag^+
B. Sn^{2+}
C. NO_3^-
D. There is no spectator ion

Response: _____

NI · Extra practice

Original diploma-style practice | Items 5-6

NI-D05 · Multiple choice

Given: $Zn(s) + Pb(NO_3)_2(aq) \rightarrow Zn(NO_3)_2(aq) + Pb(s)$. Which is the net ionic equation?

A. $Zn(s) + Pb^{2+}(aq) \rightarrow Zn^{2+}(aq) + Pb(s)$
B. $Zn(s) + 2NO_3^-(aq) \rightarrow Zn(NO_3)_2(aq)$
C. $Zn^{2+}(aq) + Pb(s) \rightarrow Zn(s) + Pb^{2+}(aq)$
D. $Zn(s) + Pb(NO_3)_2(aq) \rightarrow Zn^{2+}(aq) + Pb(s)$

Response: _____

NI-D06 · Numerical response

For $2Cr(s) + 3Sn^{2+}(aq) \rightarrow 2Cr^{3+}(aq) + 3Sn(s)$, what is the total charge on each side? Enter a positive integer.

Response: _____

NI · Extra practice

Original diploma-style practice | Items 7-8

NI-D07 · Select all that apply

Select every substance that stays whole in a total ionic equation.

A. Ag(s)
B. K_2SO_4(aq)
C. H_2(g)
D. $PbCl_2$(s)

Response: _____

NI-D08 · Ordering / ranking

Put the actions for writing a net ionic equation in order.

First to last

1. Cancel the spectator ions
2. Check atoms and charge
3. Write the balanced equation with states
4. Write what is left
5. Split the dissolved ionic compounds into ions

Response: _____

NI · Extra practice

Original diploma-style practice | Items 9-10

NI-D09 · Multiple choice

Which net ionic equation shows a redox reaction?

A. $Ag^{+}(aq) + Cl^{-}(aq) \rightarrow AgCl(s)$
B. $Ba^{2+}(aq) + SO_4^{2-}(aq) \rightarrow BaSO_4(s)$
C. $Fe(s) + 2H^{+}(aq) \rightarrow Fe^{2+}(aq) + H_2(g)$
D. $Ca^{2+}(aq) + CO_3^{2-}(aq) \rightarrow CaCO_3(s)$

Response: _____

NI-D10 · Matching

Match each dissolved substance to its ions.

Items to match:

1. $Na_2CO_3(aq)$
2. $Ca(NO_3)_2(aq)$
3. $NH_4Cl(aq)$
4. $HNO_3(aq)$

Targets:

A. Ca^{2+} and $2NO_3^{-}$
B. $2Na^{+}$ and CO_3^{2-}
C. H^{+} and NO_3^{-}
D. NH_4^{+} and Cl^{-}

Response: _____

NI · Extra practice

Original diploma-style practice | Items 11-12

NI-D11 · Numerical response

Given: $3Mg(s) + 2FeCl_3(aq) \rightarrow 3MgCl_2(aq) + 2Fe(s)$. How many Cl^- ions cancel from each side? Enter an integer.

Response: _____

NI-D12 · Written response

Nickel metal is put in copper(II) sulfate solution. A student says $Ni(s) + Cu^{2+}(aq) \rightarrow Ni^{2+}(aq) + Cu(s)$ is wrong because the sulfate ion is missing. Explain why the equation is correct.

Response: _____