

REDOX PRACTICE #2

Some of the following unbalanced reactions are redox reactions, some are not. In each case: A) Is the reaction redox? B) If yes, name the element reduced, the element oxidized, and their respective $\frac{1}{2}$ reactions. C) What is the oxidizing agent and what is the reducing agent?

1. $\text{H}_2(\text{g}) + \text{N}_2(\text{g}) \rightarrow \text{NH}_3(\text{g})$
2. $\text{C}(\text{cr}) + \text{H}_2\text{O}(\text{g}) \rightarrow \text{CO}(\text{g}) + \text{H}_2(\text{g})$
3. $\text{AgNO}_3(\text{g}) + \text{FeCl}_3(\text{aq}) \rightarrow \text{AgCl}(\text{cr}) + \text{Fe}(\text{NO}_3)_3(\text{aq})$
4. $\text{H}_2\text{CO}_3(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{g})$
5. $\text{MgSO}_4(\text{aq}) + \text{Ca}(\text{OH})_2(\text{aq}) \rightarrow \text{Mg}(\text{OH})_2(\text{aq}) + \text{CaSO}_4(\text{cr})$
6. $\text{H}_2\text{O}_2(\text{aq}) + \text{PbS}(\text{cr}) \rightarrow \text{PbSO}_4(\text{cr}) + \text{H}_2\text{O}(\text{l})$
7. $\text{KCl}(\text{cr}) + \text{H}_2\text{SO}_4(\text{aq}) \rightarrow \text{KHSO}_4(\text{aq}) + \text{HCl}(\text{g})$
8. $\text{HNO}_3(\text{aq}) + \text{H}_3\text{PO}_3(\text{aq}) \rightarrow \text{NO}(\text{g}) + \text{H}_3\text{PO}_4(\text{aq}) + \text{H}_2\text{O}(\text{l})$
9. $\text{HNO}_3(\text{aq}) + \text{I}_2(\text{cr}) \rightarrow \text{HIO}_3(\text{aq}) + \text{NO}_2(\text{g}) + \text{H}_2\text{O}(\text{l})$
10. $\text{Na}_2\text{S}(\text{aq}) + \text{AgNO}_3(\text{aq}) \rightarrow \text{Ag}_2\text{S}(\text{cr}) + \text{NaNO}_3(\text{aq})$
11. $\text{H}^+(\text{aq}) + \text{NO}_3^-(\text{aq}) + \text{Fe}^{+2}(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{NO}(\text{g}) + \text{Fe}^{+3}(\text{aq})$
12. $\text{FeBr}_2(\text{aq}) + \text{Br}_2(\text{l}) \rightarrow \text{FeBr}_3(\text{aq})$
13. $\text{S}_2\text{O}_3^{2-}(\text{aq}) + \text{I}_2(\text{cr}) \rightarrow \text{S}_4\text{O}_6^{2-}(\text{aq}) + \text{I}^-(\text{aq})$
14. $\text{H}_2\text{O}_2(\text{aq}) + \text{MnO}_4^-(\text{aq}) \rightarrow \text{O}_2(\text{g}) + \text{Mn}^{+2}(\text{aq})$