

NCERT/CBSE CHEMISTRY CLASS 11 textbook

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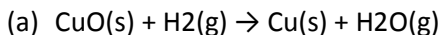
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Solutions/Answers to NCERT/CBSE CHEMISTRY Class 11(Class XI) textbook

CHAPTER EIGHT

REDOX REACTIONS

8.3 Justify that the following reactions are redox reactions:



In this equation CuO is reduced to Cu and the oxidation no of Cu in CuO decreases from +2 to 0 in Cu. Hydrogen is oxidized to water and its ON no increases to +1 in water from 0 in Hydrogen. Therefore it is a redox reaction.

(b) $\text{Fe}_2\text{O}_3\text{(s)} + 3\text{CO(g)} \rightarrow 2\text{Fe(s)} + 3\text{CO}_2\text{(g)}$:- In the given reaction the ON of Fe decreases from +3 in Fe_2O_3 to 0 in Fe. While the ON of C in CO increases from +2 to +4 in CO_2 . Therefore Fe_2O_3 is reduced and CO is oxidized to CO_2 . Therefore it is a redox reaction.

(c) $4\text{BCl}_3\text{(g)} + 3\text{LiAlH}_4\text{(s)} \rightarrow 2\text{B}_2\text{H}_6\text{(g)} + 3\text{LiCl(s)} + 3\text{AlCl}_3\text{(s)}$:- In the given reaction the ON of B decreases from +3 in BCl_3 to 3 in B_2H_6 . While the ON of H in LiAlH_4 increases from -1 to +1 in B_2H_6 . Therefore BCl_3 is reduced and LiAlH_4 is oxidized. Therefore it is a redox reaction.

(d) $2\text{K(s)} + \text{F}_2\text{(g)} \rightarrow 2\text{K}^+\text{F}^-\text{(s)}$:- In the given reaction the ON of K increases from +0 in K to +1 in KF . While the ON of F decreases from 0 to -1 in KF . Therefore K is Oxidised to KF while F is reduced. Therefore it is a redox reaction.

(e) $4\text{NH}_3\text{(g)} + 5\text{O}_2\text{(g)} \rightarrow 4\text{NO(g)} + 6\text{H}_2\text{O(g)}$:- In the given reaction the ON of N increases from -3 in NH_3 to +2 in NO . While the ON of O decreases from 0 to -2 in NO or H_2O . Therefore NH_3 is oxidized and O_2 has been reduced. Therefore it is a redox reaction.

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