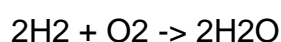


50 Examples of Balanced Chemical Equations with Answers

Chemical equations help us understand how substances react and transform into new substances. A balanced chemical equation ensures that the number of atoms of each element on both sides of the equation is the same. This article provides 50 examples of balanced chemical equations with answers, making it easy for students, especially Class 10 students, to learn how to balance equations properly.

What is a Balanced Chemical Equation?

A balanced chemical equation represents a chemical reaction where the number of atoms for each element is the same on both the reactant and product sides. For example:



50 Examples of Balanced Chemical Equations with Answers

1. Combustion Reactions

1. $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$
2. $\text{C}_3\text{H}_8 + 5\text{O}_2 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$
3. $\text{C}_2\text{H}_6 + \frac{7}{2}\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$
4. $\text{C}_4\text{H}_{10} + \frac{13}{2}\text{O}_2 \rightarrow 4\text{CO}_2 + 5\text{H}_2\text{O}$
5. $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$

2. Synthesis Reactions

6. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
7. $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
8. $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$
9. $\text{CaO} + \text{CO}_2 \rightarrow \text{CaCO}_3$
10. $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$

3. Decomposition Reactions

11. $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
12. $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
13. $2\text{HgO} \rightarrow 2\text{Hg} + \text{O}_2$
14. $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$
15. $\text{NH}_4\text{NO}_3 \rightarrow \text{N}_2\text{O} + 2\text{H}_2\text{O}$

4. Single Replacement Reactions

16. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
17. $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
18. $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
19. $\text{Cu} + 2\text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$
20. $\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{Fe}$

5. Double Replacement Reactions

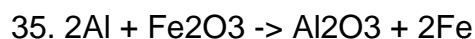
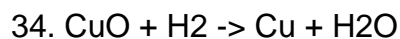
21. $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
22. $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
23. $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
24. $\text{Pb}(\text{NO}_3)_2 + \text{KI} \rightarrow \text{PbI}_2 + 2\text{KNO}_3$
25. $\text{Na}_2\text{CO}_3 + \text{CaCl}_2 \rightarrow \text{CaCO}_3 + 2\text{NaCl}$

6. Acid-Base Neutralization Reactions

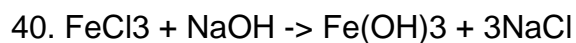
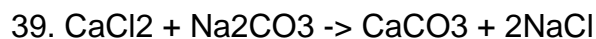
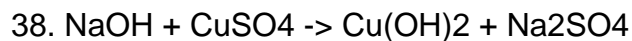
26. $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
27. $\text{H}_2\text{SO}_4 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
28. $\text{HNO}_3 + \text{KOH} \rightarrow \text{KNO}_3 + \text{H}_2\text{O}$
29. $\text{CH}_3\text{COOH} + \text{NaOH} \rightarrow \text{CH}_3\text{COONa} + \text{H}_2\text{O}$
30. $\text{H}_2\text{CO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{CaCO}_3 + 2\text{H}_2\text{O}$

7. Redox Reactions

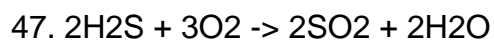
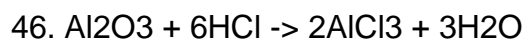
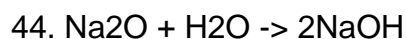
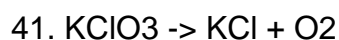
31. $\text{Fe}_2\text{O}_3 + 3\text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
32. $\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + \text{Cl}_2 + 2\text{H}_2\text{O}$
33. $2\text{K} + 2\text{H}_2\text{O} \rightarrow 2\text{KOH} + \text{H}_2$



8. Precipitation Reactions



9. Other Important Reactions



Conclusion

Understanding these 50 examples of balanced chemical equations with answers is crucial for students, especially Class 10 students. Download the PDF for easy offline reference.