



EXAM-DAY · 90-MIN REVISION CARD

Chemical Reactions and Equations

Print this · Fold it · Carry to the exam-hall gate · Revise once · Then walk in.

FORMULAS & KEY RESULTS

Conservation of mass: atoms in = atoms out. Balance by adjusting **COEFFICIENTS** only.

Combination: $A + B \rightarrow AB$ (e.g. $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$)

Decomposition: $AB \rightarrow A + B$ (e.g. $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$)

Displacement: $A + BC \rightarrow AC + B$ (A more reactive than B)

Double displacement: $AB + CD \rightarrow AD + CB$ (e.g. $\text{Na}_2\text{SO}_4 + \text{BaCl}_2 \rightarrow \text{BaSO}_4\downarrow + 2 \text{NaCl}$)

Oxidation = +O / -H / loss of e⁻.

Reduction = opposite. (Mnemonic: OIL RIG)

Oxidising agent → gets reduced.

Reducing agent → gets oxidised.

Reactivity series (memorise!): $\text{K} > \text{Na} > \text{Ca} > \text{Mg} > \text{Al} > \text{Zn} > \text{Fe} > \text{Pb} > [\text{H}] > \text{Cu} > \text{Hg} > \text{Ag} > \text{Au}$

Rust: $4 \text{Fe} + 3 \text{O}_2 + x\text{H}_2\text{O} \rightarrow 2 \text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$ (HYDRATED iron(III) oxide)

TOP 5 PYQ PATTERNS**1 Balance the equation and identify reaction type***3 marks · 90% of years*

Balance by coefficients only; state symbols mandatory; type + one-line justification.

2 Fe + CuSO₄: write equation + state colour change*3 marks · 55% of years*Blue CuSO₄ fades → pale green FeSO₄ + red-brown Cu deposit. Mention reactivity-series reasoning.**3 Identify oxidising and reducing agent in a given redox***3 marks · 85% of years*

Track O / H movement. Agent = the OPPOSITE of what its name suggests.

4 Corrosion: define + rust equation + 2 prevention methods*3 marks · 70% of years*Rust = Fe₂O₃·xH₂O (HYDRATED). Two prevention methods + mechanism for each.**5 What is rancidity? Why N₂ flush in chip packets?***2 marks · 60% of years*Oxidation of fats by atmospheric O₂; inert N₂ displaces O₂ → no oxidation.**90-MIN REVISION FLOW****0–15 min**

Balance these 5 equations from memory:

(a) $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + \text{H}_2$ (b) $\text{Pb(NO}_3)_2 \rightarrow \text{PbO} + \text{NO}_2 + \text{O}_2$ (c) $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$ (d) $\text{Al} + \text{CuCl}_2 \rightarrow \text{AlCl}_3 + \text{Cu}$ (e) $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + \text{NaCl}$ **15–30 min**

Classify each balanced equation into one of the 4 reaction types — give a 1-line justification each.

30–45 min

Pick any 3 redox equations from above. Identify oxidised + reduced species + name the oxidising and reducing agents.

45–60 min

Recite the reactivity series 3 times in order: K Na Ca Mg Al Zn Fe Pb [H] Cu Hg Ag Au. Then re-derive the rust equation from memory.

60–75 min

Take the 15-MCQ Quick Drill under 20-minute timer. Target ≥ 12/15.

75–90 min

Review every wrong answer. Re-read the corresponding notes-slide. Done.

Confidence, not anxiety. You've practised this all year. Trust your steps. Don't change strategy on exam morning. Helpline: +91 70330 05444 · readyforboards.com