

Half-Reaction Method

Split, Balance, Recombine.

Why split redox reactions?



Holistic Balancing (Trial & Error)

- High cognitive load
- Easy to lose track of electrons
- Highly prone to charge imbalances in complex redox systems

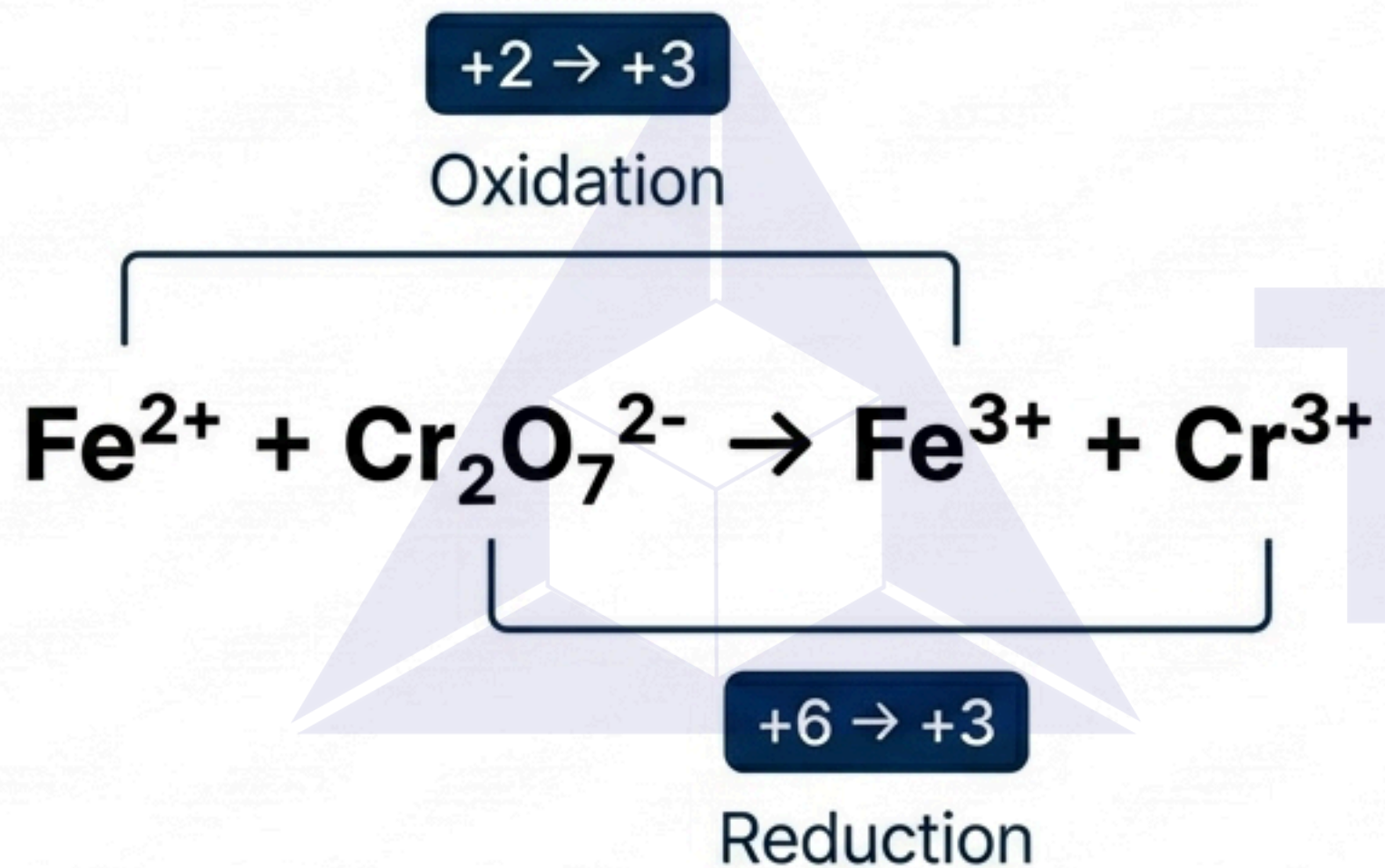


Half-Reaction Method

- Systematic Divide & Conquer algorithm
- Explicit tracking of electron transfer
- Guarantees strict conservation of both mass and charge

**Oxidation
Lane**

**Reduction
Lane**

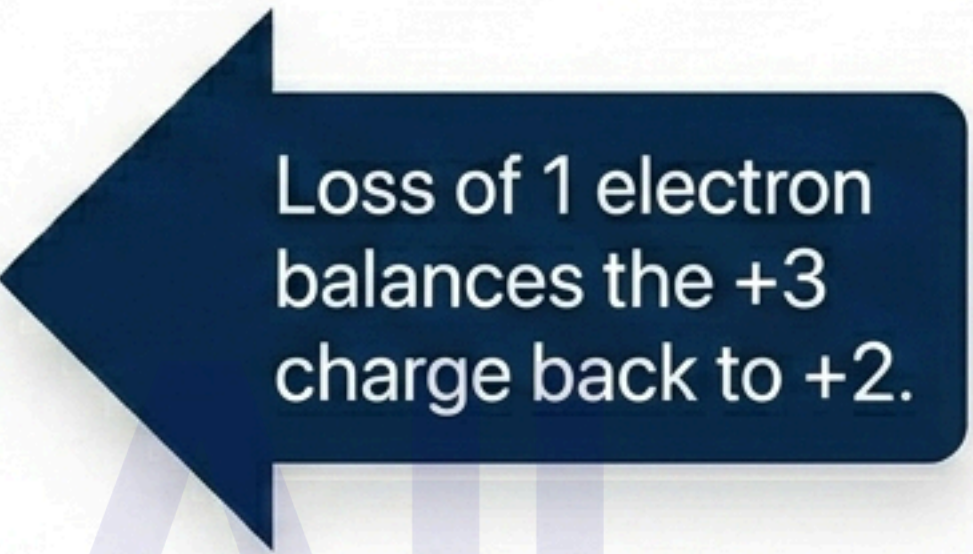


Oxidation Half

Step 1 (Base):



Step 2 (Balance Charge): $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+} + e^{-}$



Loss of 1 electron
balances the +3
charge back to +2.

Reduction Lane (Paused)



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now

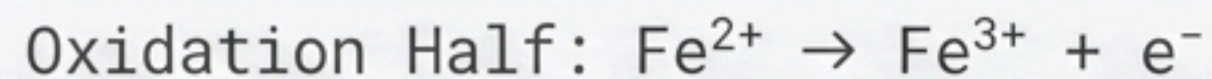


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Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter





Reduction Half

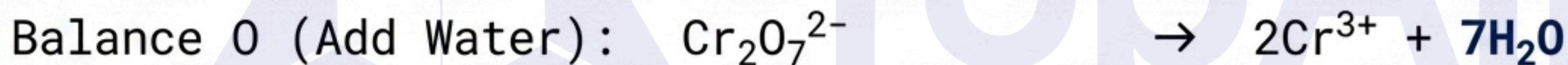
Base:



Balance Atoms:



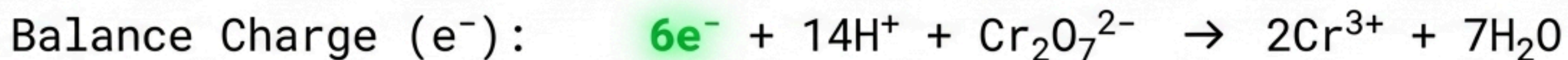
Balance O (Add Water):



Balance H (Add H^+):



Balance Charge (e^-):



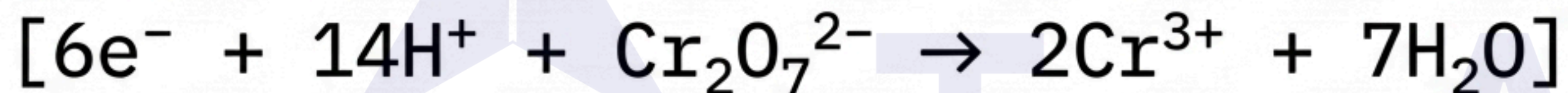
Net charge left: +12. Net charge right: +6. Add 6e^- to left.

Oxidation



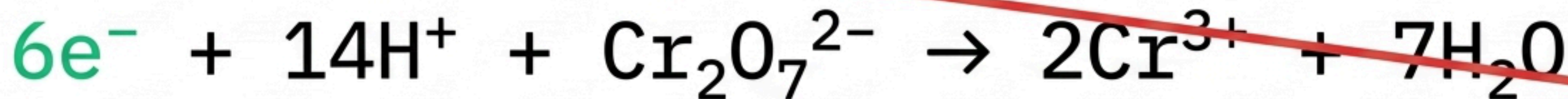
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Reduction

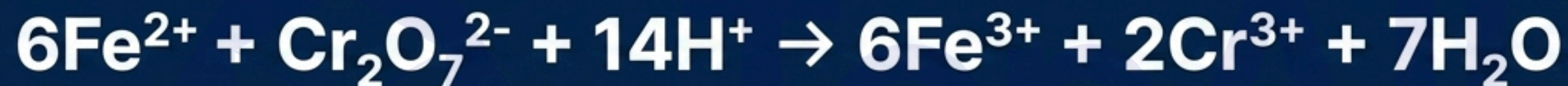


← × 1

Pre-Merge State



Final Balanced Equation



The electrons have successfully facilitated the transfer and vanished from the net ionic equation.

System Check

Verification: Atoms & Charges

Reactants

Fe: 6
Cr: 2
O: 7
H: 14

Products

6
2
7
14

Net Charge $[6(+2) - 2 + 14(+1)]$

+24

=

$[6(+3) + 2(+3)]$

+24

✓ Verified



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

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Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

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