

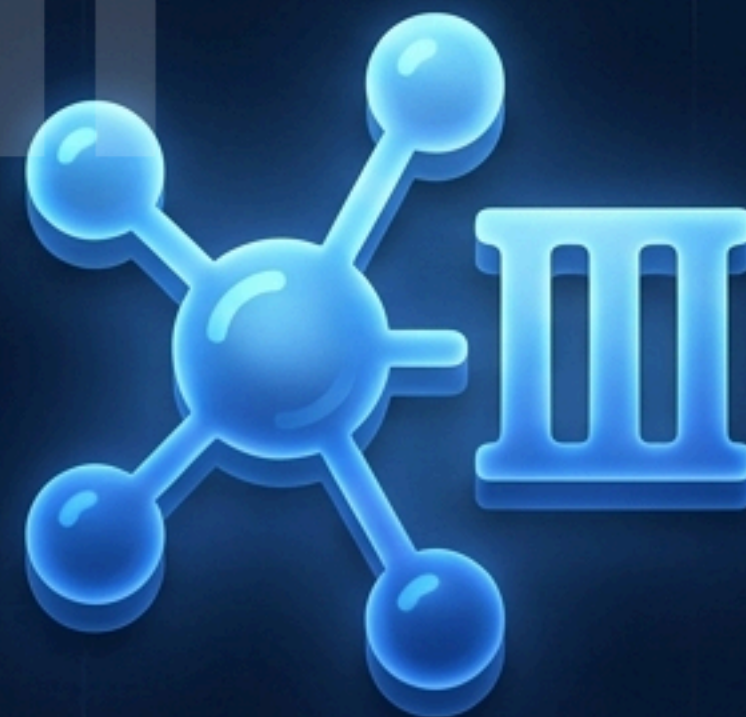
[JEE Chemistry]

[Redox Reactions]

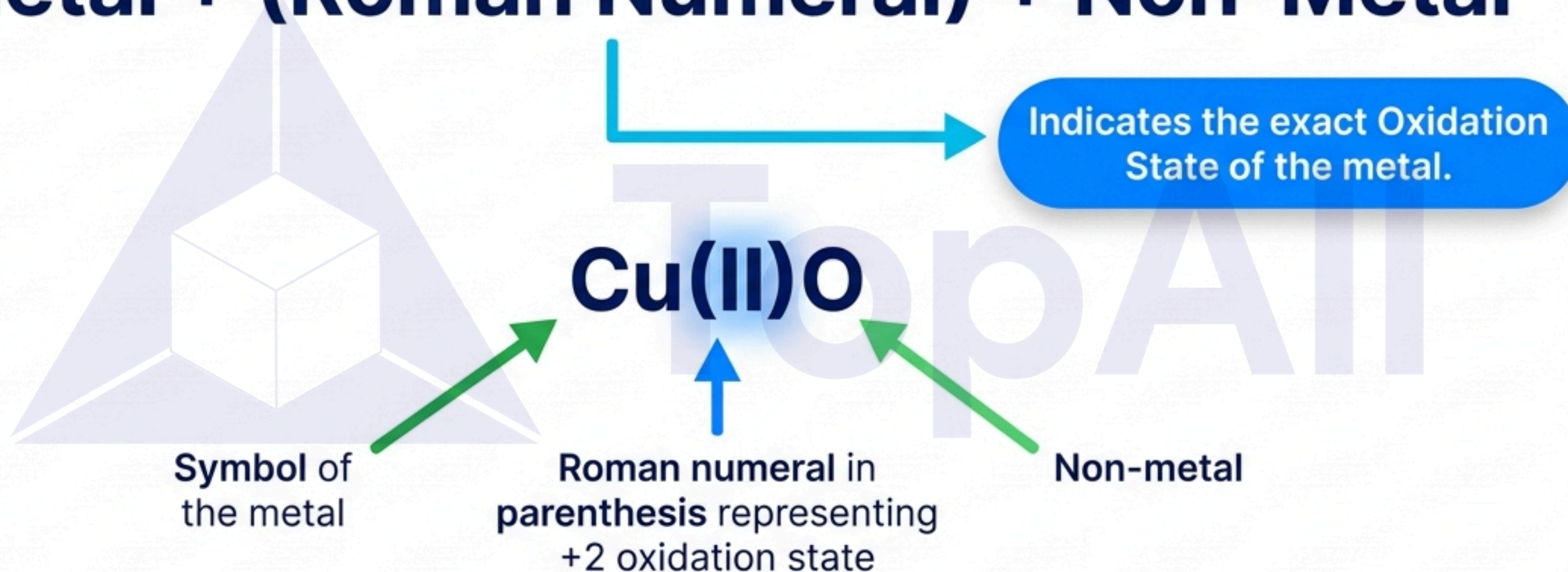


Stock Notation Made Simple

Visually decoding Alfred Stock's
naming system for oxidation states.



Metal + (Roman Numeral) + Non-Metal



Named after **German chemist Alfred Stock**, this notation helps identify whether a species is present in an oxidized or reduced form.

Aurous Chloride



Exam Snapshot

Cl is -1

To balance, Au must be +1.

Therefore: Roman numeral is (I).

Auric Chloride



Exam Snapshot

$3 \times \text{Cl atoms (-1 each)} = -3 \text{ total charge.}$

To balance, Au must be +3.

Therefore: Roman numeral is (III).



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

$$E=mc^2$$



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Stannous Chloride



Traditional Name: Stannous Chloride

Sn is +2 (balanced by two Cl at -1)

Stannic Chloride



Traditional Name: Stannic Chloride

Sn is +4 (balanced by four Cl at -1)

Key Takeaways

Why use Stock Notation? Traditional names (ous/ic) require memorizing lower/higher states. Stock notation explicitly hands you the oxidation state (+2 or +4) directly in the formula.

Calculating for Multiple Metal Atoms: Fe_2O_3 vs FeO

FeO

1 Oxygen (-2)

Fe is +2

Fe(II)O

Fe_2O_3

Target Formula

Step 1: Calculate total negative charge.

3 Oxygen atoms $\times$ -2 =
-6 total.

Step 2: Distribute charge over metal atoms.

+6 required to balance,
divided by 2 Iron atoms
= +3 per Iron atom.

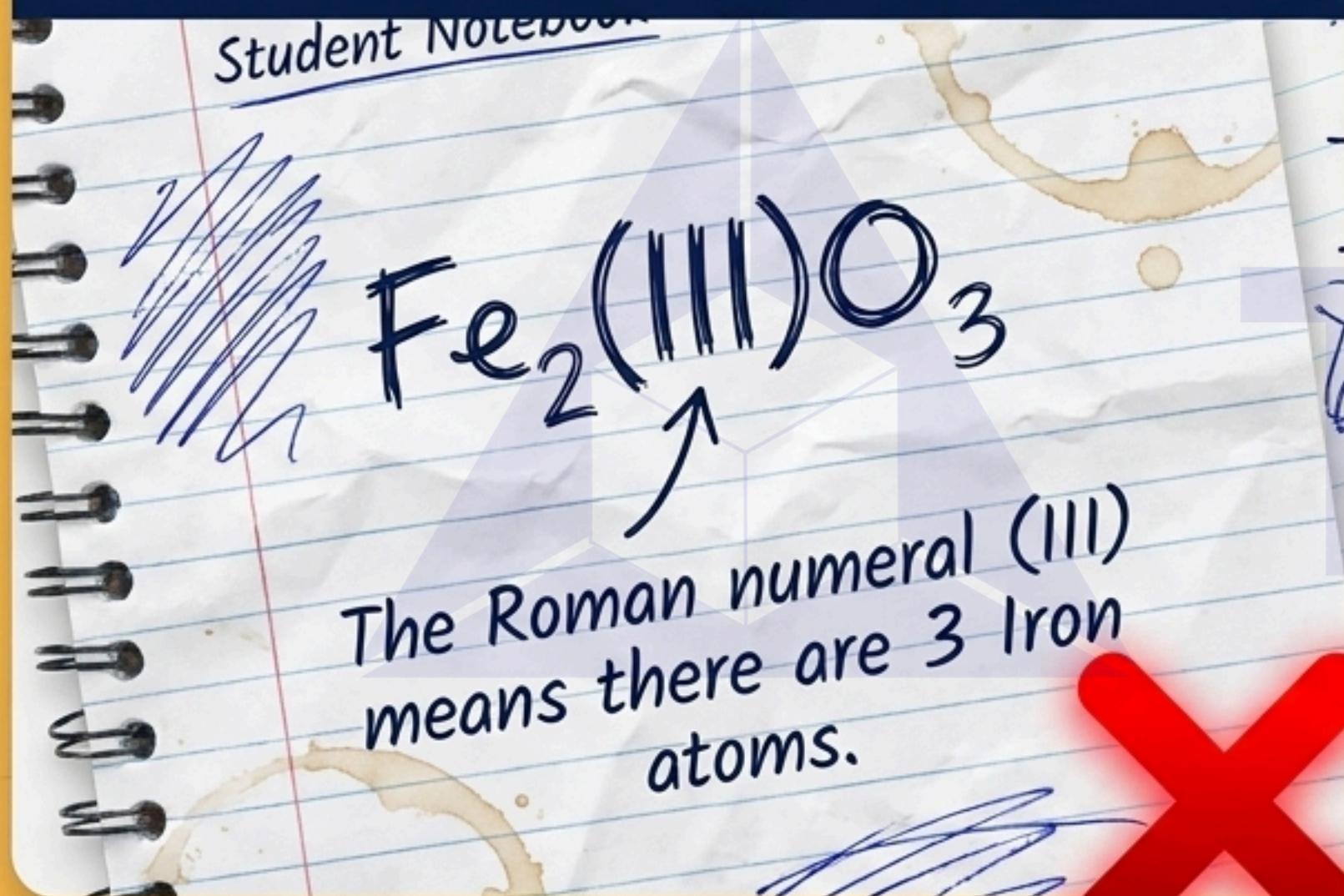
Result:

$\text{Fe}_2\text{(III)O}_3$

JEE Trap Alert

The Ultimate Stock Notation Trap

THE TRAP (Not That)



THE TRUTH (Do This)



The Roman numeral (III) means each Iron atom is in a +3 oxidation state. Atom count is dictated ONLY by the subscript.



Takeaway: Roman Numeral = Oxidation State. Subscript = Atom Count.



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