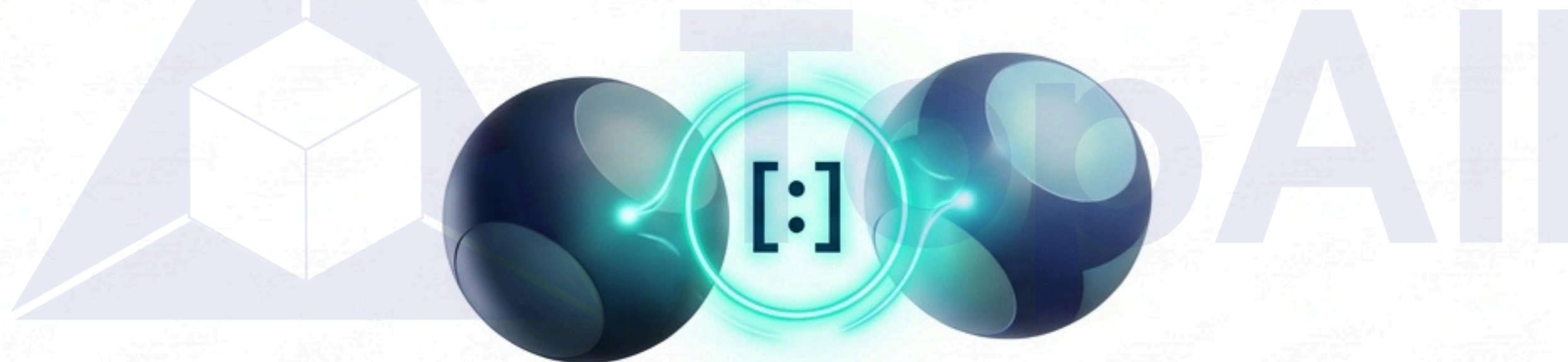


CLASS 11 CHEMISTRY • EQUILIBRIUM

Lewis Concept of Acids and Bases

Mastering the Electron-Pair Transfer Model



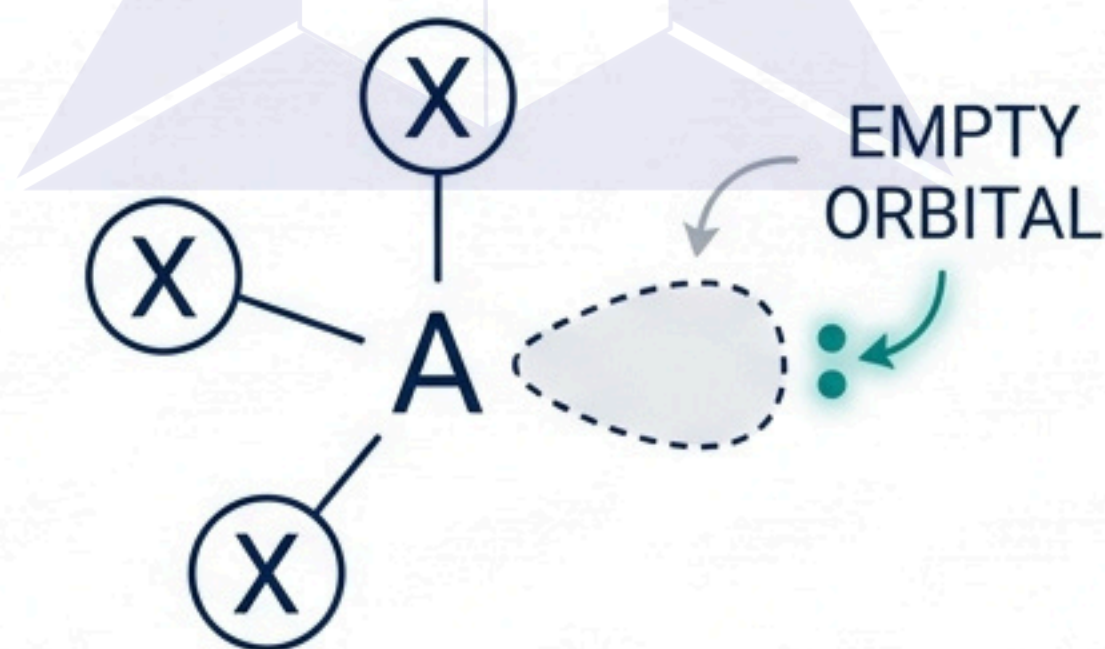
A premium, exam-smart guide to the most comprehensive definition of acids and bases.

DEFINING THE ACID

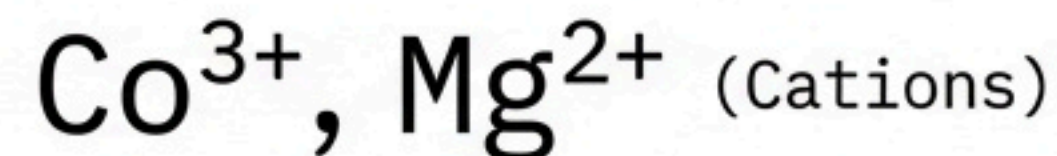
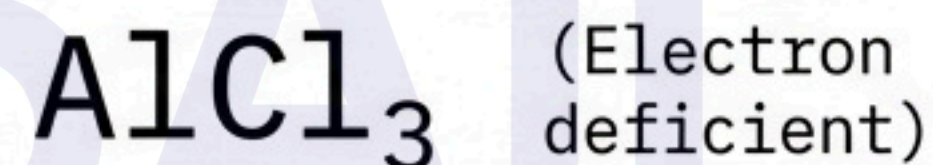
The Lewis Acid

 **ELECTRON PAIR ACCEPTOR**

According to G.N. Lewis (1923), an acid is defined not by protons, but by electrons. A Lewis Acid is any species that is capable of **accepting an electron pair**.



Look for **electron-deficient** species or **cations**.

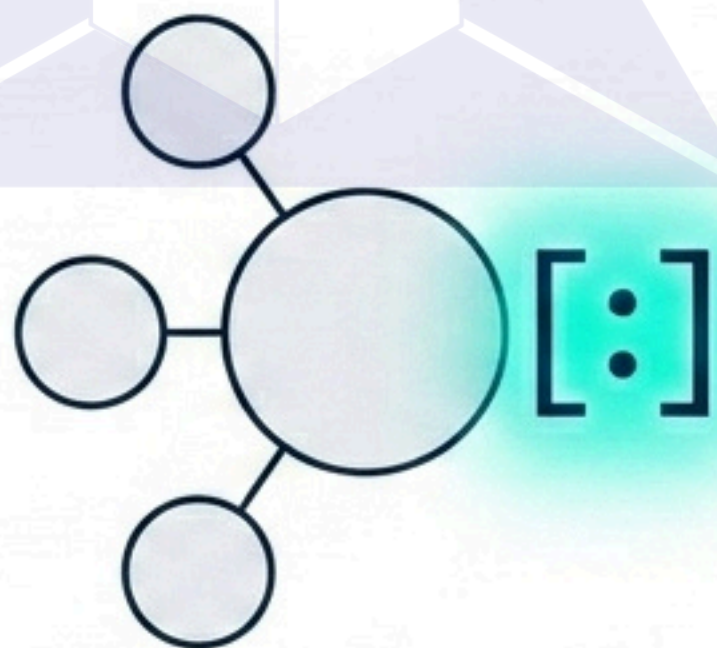


DEFINING THE BASE

The Lewis Base

 **ELECTRON PAIR DONOR**

A Lewis Base is the perfect partner to the Lewis Acid. It is defined as any species that is capable of **donating an electron pair**.



Exam-Smart Tip: Look for species with **lone pairs** or **anions**.

$\text{H}_2\text{O}:$ (Lone pairs on Oxygen)

$:\text{NH}_3$ (Lone pair on Nitrogen)

OH^- , F^- (Anions)



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



At prep.topall.app

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



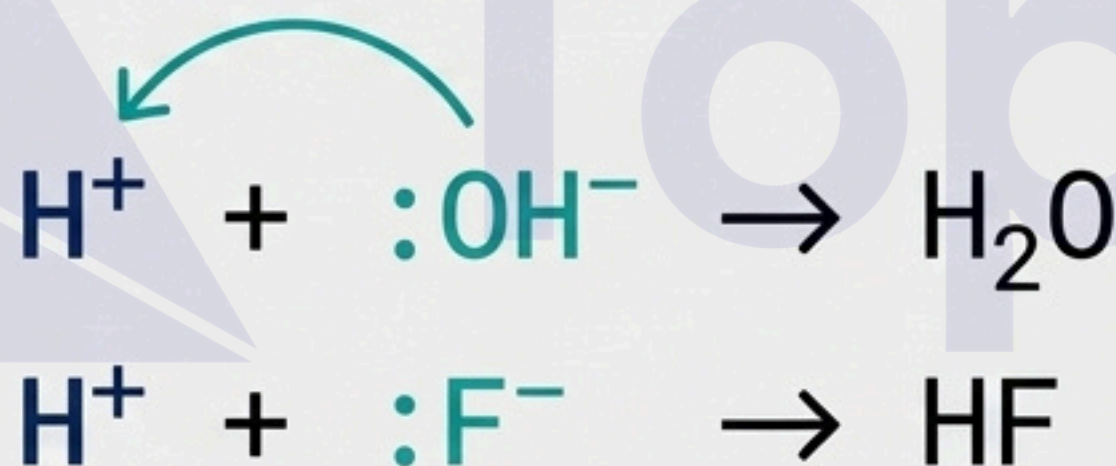
APPLICATION 01



The Proton as a Lewis Acid

A bare proton (H^+) is highly reactive and possesses an empty orbital. It acts as a perfect Lewis Acid by accepting a lone pair of electrons from bases like hydroxyl or fluoride ions.

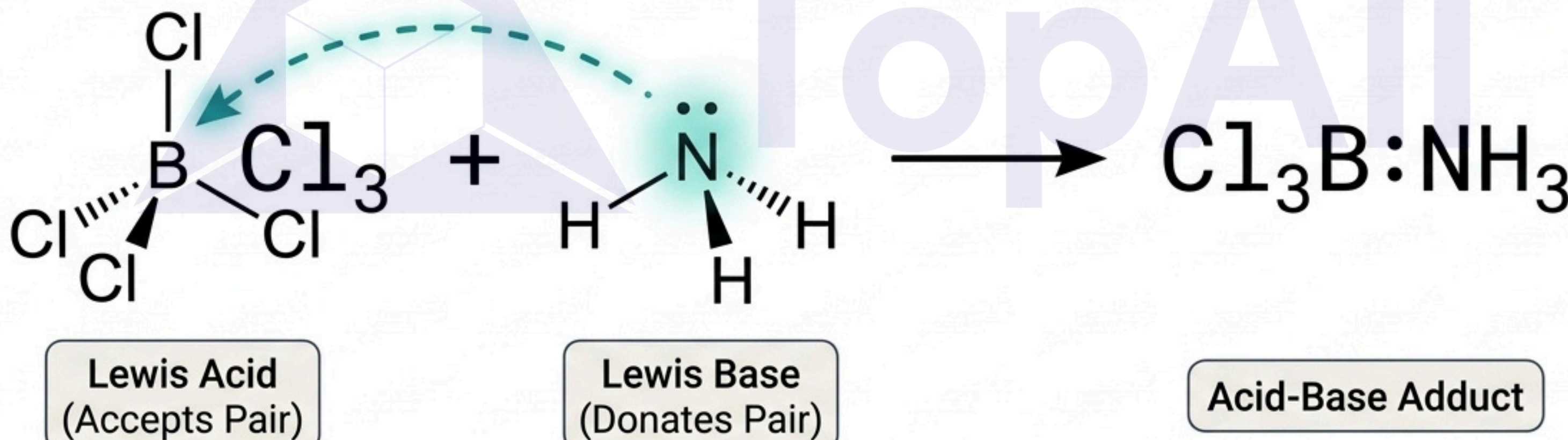
Reaction Card



BCl_3 as a Lewis Acid

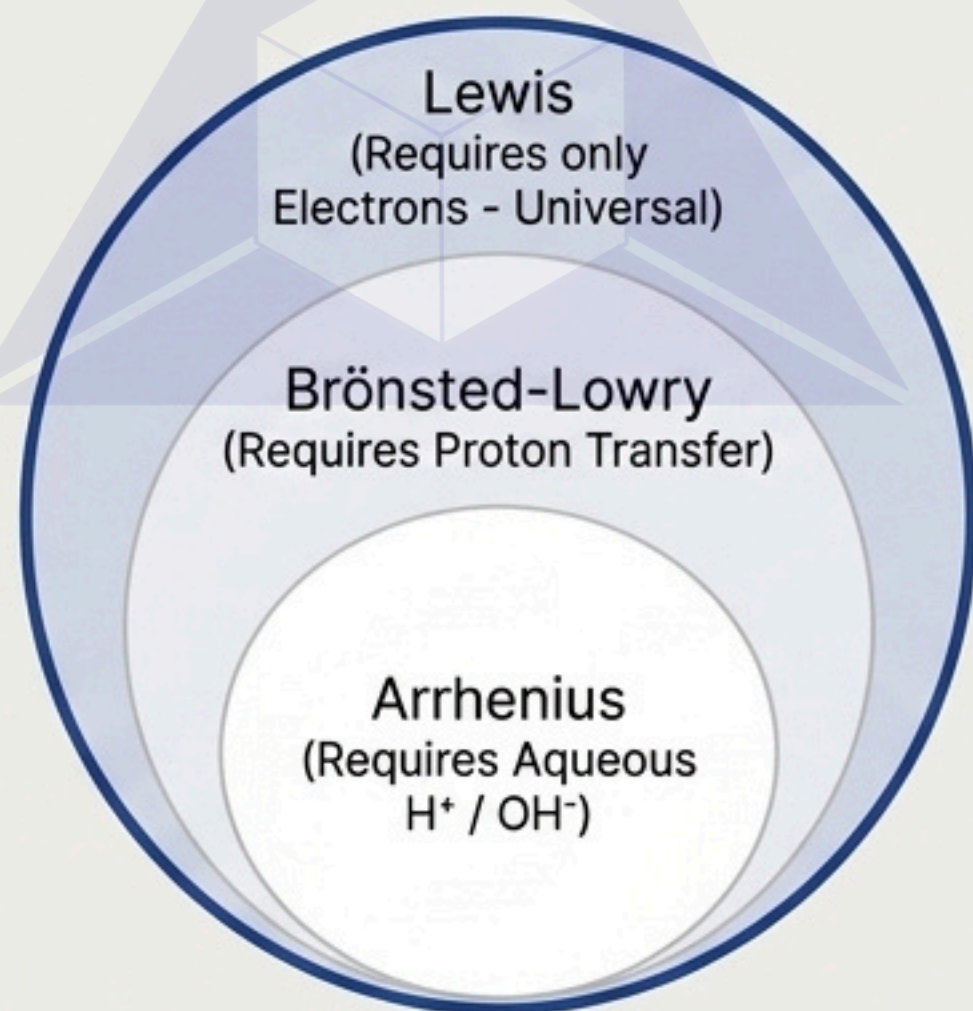
! NO PROTON REQUIRED

Boron trichloride (BCl_3) does not contain any hydrogen ions (protons) to donate. However, it is an electron-deficient species. It reacts with ammonia (NH_3) by accepting its lone pair.



The Universal Model

The electron-pair transfer model proposed by Lewis is fundamentally broader than proton-only definitions. It encompasses all previous theories and explains reactions where no protons are present.



Key Takeaways

- ✓ **Acid:** Electron-pair acceptor.
- ✓ **Base:** Electron-pair donor.
- ✓ **The Lewis Advantage:** Explains the acidity of electron-deficient molecules (like BCl_3 , BF_3 , AlCl_3) that lack protons entirely.



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



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

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis