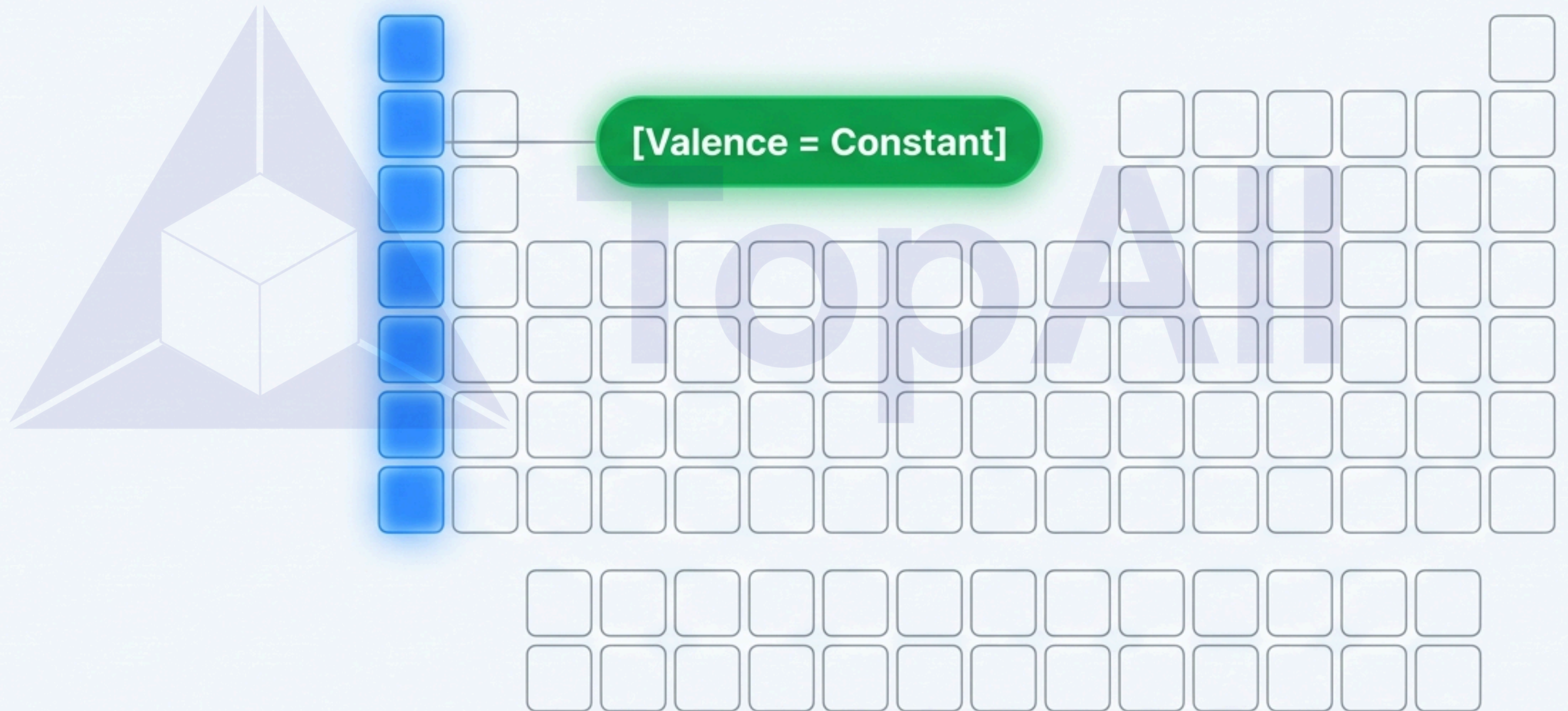


Same Group, Same Valence Code

Concept 6: Groupwise Electronic Configurations



The Vertical Family

Elements sharing a column share a chemical destiny.



A **Group** (or family) is a vertical column in the Periodic Table (Numbered 1-18 by IUPAC).



Elements in the same group possess **similar valence shell** electronic configurations.



Same number of outer electrons = **Similar chemical properties.**

Decoding Group 1: The Alkali Metals

The inner core grows, but the outer shell repeats.

Li (Z=3):	[He]	2s¹
Na (Z=11):	[Ne]	3s¹
K (Z=19):	[Ar]	4s¹
Rb (Z=37):	[Kr]	5s¹
Cs (Z=55):	[Xe]	6s¹
Fr (Z=87):	[Rn]	7s¹



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



The Universal Formula

Abstracting the pattern for s-block elements.



The chemically inert,
completely filled inner core.

Principal Quantum Number
(Matches the Period
number: 2, 3, 4...).

[Noble Gas] ns¹

The orbital being filled
(Defines the s-block).

The **single valence electron**
(Dictates Group 1 properties).

Structure Dictates Function

Why the valence code matters in chemistry.

Same Configuration

1 valence electron

Same Energetic Tendency

Low ionization enthalpy.
Easy to lose 1 e⁻.
Forms +1 oxidation state.

Same Reactivity

Reacts vigorously with
water, never found pure in
nature.



The JEE Trap: Core vs. Valence

The valence repeats, but the atom does not scale linearly.



Assuming moving down a group implies identical internal structure and smooth linear scaling.



The inner core changes drastically! (e.g., 3d orbitals fill before Rb, 4f fill before Fr). This alters shielding effects.

Key Takeaway: Periodicity relies on the valence configuration, NOT atomic mass or a linear inner core.

Q: Periodicity is fundamentally a consequence of...

(A) Atomic Mass

(B) Periodic variation in electronic configuration



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