

Periodic Properties and Variation of Properties

Chapter 1: Periodic Properties and Variation of Properties · Topic 1

Key Concept

Atomic size generally decreases across a period (left to right) due to increasing nuclear charge, and increases down a group due to added electron shells.

Metallic character decreases across a period and increases down a group, as it relates to the ease of losing electrons.

Valency generally increases from 1 to 4 across a period, then decreases from 4 to 0 (or 1) as elements approach noble gas configuration.

Ionisation energy (energy needed to remove an electron) generally increases across a period and decreases down a group.

Quick Revision Notes

- Atomic size decreases across a period.
- Atomic size increases down a group.
- Metallic character decreases across a period.
- Metallic character increases down a group.
- Valency increases 1 to 4 across a period.
- Then decreases 4 to 0 approaching noble gases.
- Ionisation energy increases across a period.
- Ionisation energy decreases down a group.

Practice Questions

- 1 Compare the atomic sizes of sodium and chlorine.
- 2 Compare the metallic character of magnesium and calcium.
- 3 Discuss the valency trend across period 3.
- 4 Research ionisation energy trends with examples.
- 5 Create a table showing periodic property trends.
- 6 Explain periodic trends in your own words.