Question 1 (Periodicity)

Explain the trend in atomic and ionic radius down group 1 of the periodic table.

Down group 1, atomic radius _____ because number of shell _____,

Shielding effect _____,

Therefore attraction of nucleus to the valence electron _____.

Size of atom _____.

Down group 1, ionic radii _____ because number of shell increases,

Shielding effect _____.

Therefore attraction of nucleus to the remaining electron _____.

_____energy needed to remove the remaining electrons down the group 1.

Size of ion _____.

Question 2(Periodicity)

a) Write the spdf notation of sodium and chlorine atom and its ions

Spdf notation of $_{11}Na$:

Spdf notation of $_{17}Cl$:

Spdf notation of $_{11}Na^{+}$:

Spdf notation of $_{17}Cl^{-}$:

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b) Removal and addition of electron(s) to an atom results in changes of atomic radii.

Species	Na	Na^+	Cl	Cl^-
Radius (nm)	0.156	0.095	0.099	0.181

Explain the difference in radius between the ions and their respective neutral atoms.



Size of Na^+ vs Na.

- **When electron is _____, the mutual electron repulsion _____ but nuclear charge remained the same.**
- **The attraction between nucleus towards remaining electron _____.**
- **Size of Na^+ _____ Na.**



Size of Cl^- vs Cl.

- **When electron is _____, the mutual electron repulsion _____.**
- **Domain of electron cloud _____.**
- **The attraction between nucleus towards remaining electron _____.**
- **Size of Cl^- _____ Cl.**

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