Physical Properties of Alkali Metals

Nurture: Course on Inorganic Chemistry for Class 11

Vishal joshi • Lesson 2 • May 15, 2021

① alkali metals physical properties

① Atomic size

Li
Na
K
Rb
Cs

down the group size ↑

(2) **I.E** = amount of required energy for removal of an electron from gaseous atom

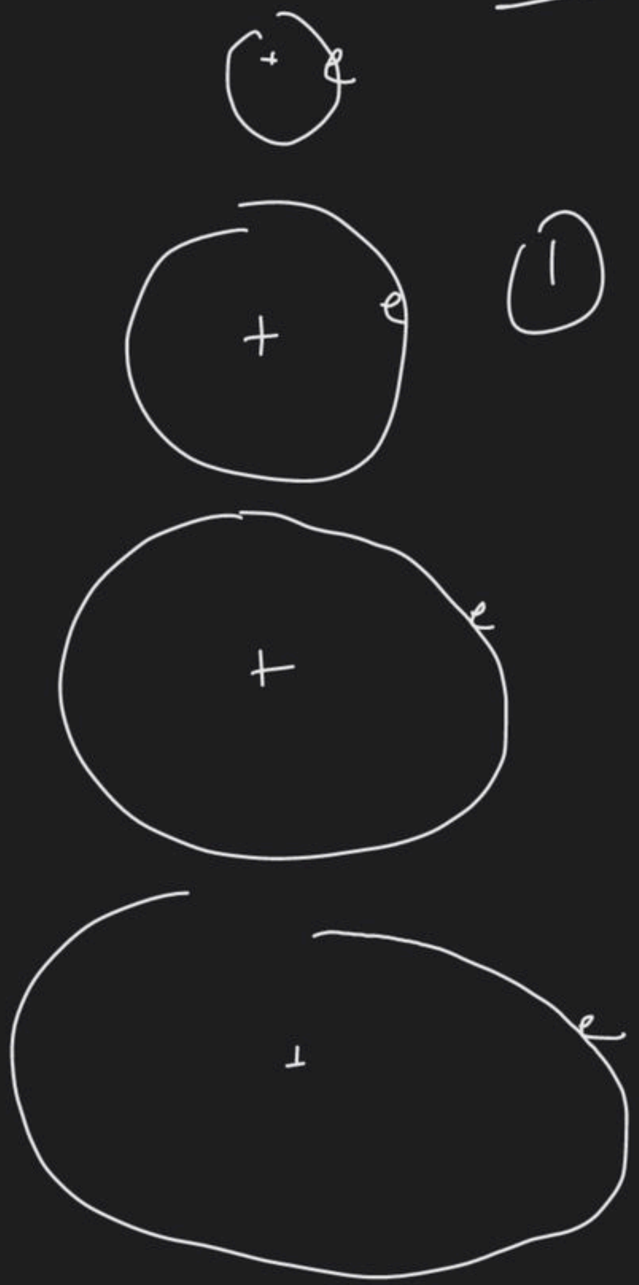
Which of the following is correct for I.E

(1) $Na_{(s)} \longrightarrow Na^{+}_{(s)} + e^{-}$

(2) $Na_{(l)} \longrightarrow Na^{+} + e^{-}$

(3) $Na_{(g)} \longrightarrow Na^{+} + e^{-}$

(4) all

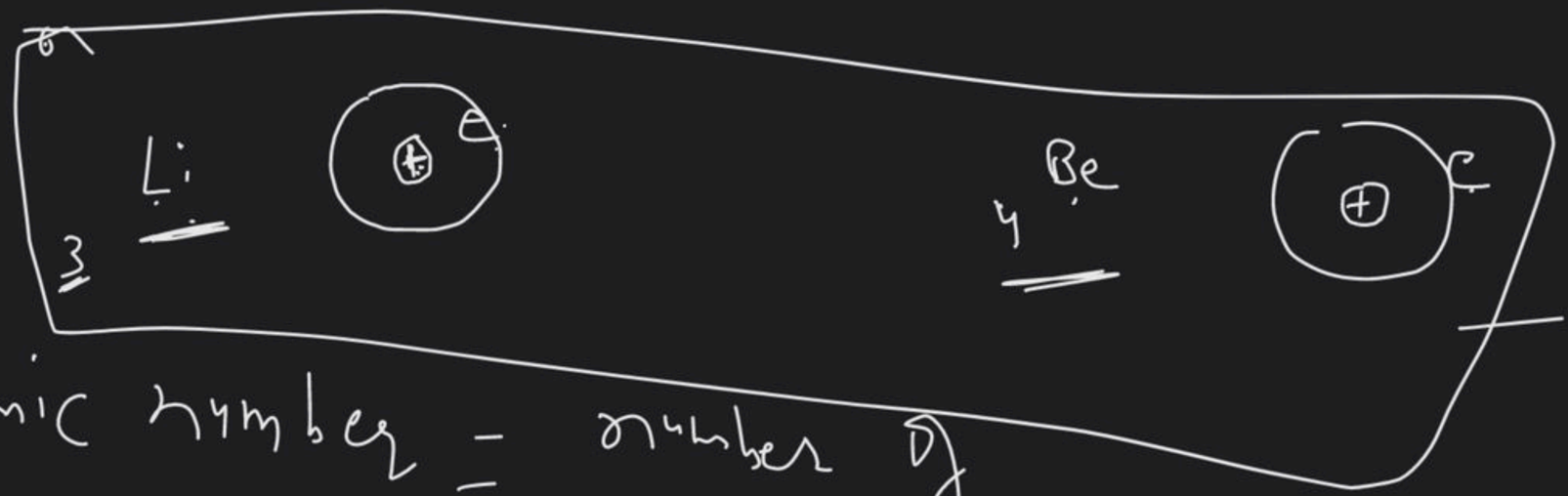


Ex Which of the following has higher I.E

(a) Li (b) Na (c) K (d) Rb

and Select the correct statement

1. Li has higher I.E as well as higher size ✗
2. Cs has higher size as well as higher I.E ✗
3. Li has lower I.E as well as lower size
4. Cs has higher size and lower I.E



atomic number = number of p

Proton = +ive charge

Order of I.E [but period same]

Li < Be

Ans Which of the following statement is correct

(1) Li has higher I.E than Be

(2) Be has high I.E than Li

(3) Be and Li both have same I.E

(4) None of these

Electropositive Character

Li
Na
K
Rb
Cs

down the group

I.E ↓ Electropositive ch. ↑

Which of the following has maximum Electropositive character.

(1) Cs (2) K (3) Rb (4) Li

S-Block

Same period 2nd

	I A	II A
2nd	Li	Be
3rd	Na	Mg
4th	K	Ca
5th	Rb	Sr
6th	Cs	Ba

I.E ↓

I.E ↑

Metallic ch. $\quad$ I.E ↓ $\quad$ metallic ch. ↑

Metal :— Element — lose — e^-

Non metal = Element — accept — e^-

Li	Be
Na	Mg
K	Ca
Rb	Sr
Cs	Ba

↓

Select the Correct option about Cs

(1) Cs is more Electropositive element among s-Block

(2) Cs has highest metallic ch. among s-Block

(3) Cs has lowest I.E among alkalimetal

(4) Cs has highest size among alkalimetal

(5) all are correct

Which of the following element has highest I.E in s-Block

(a) Be (b) Li (c) Cs (d) Be

Qus

Which of the following has highest metallic ch. in s-Block

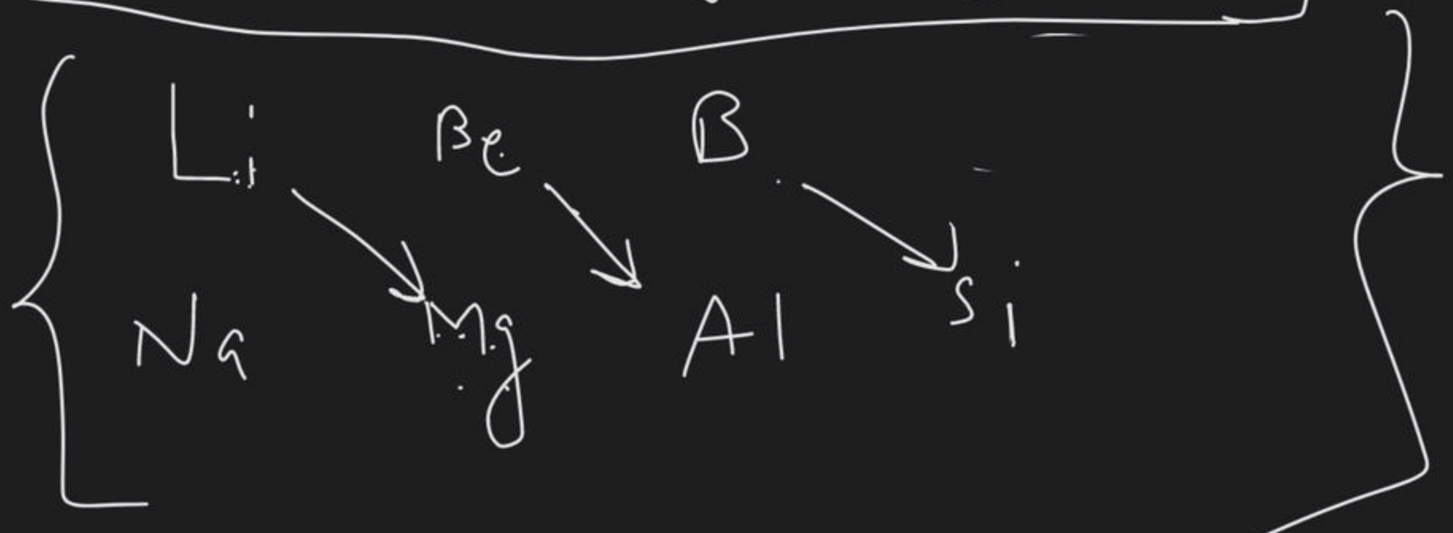
(1) Cs (2) Ba (3) both (4) none

Correct order of I.E

(1) Na > Mg (2) Na < Mg (3) Na = Mg (4) none

Diagonal :→ Charge density = $\frac{\text{charge}}{\text{size}}$

relationship.



IA

Li

Na

K

Rb

Cs

+2

Be

Mg

Ca

Sr

Ba

Ans

Which of the following Set is correct for diagonal relationship

(a) (Li → Mg) (b) (Be → Mg) (c) (Mg → Al)

(d) none (e) all