CASE STUDY QUESTION 02

Read the following and answer any four questions from (i) to (v)

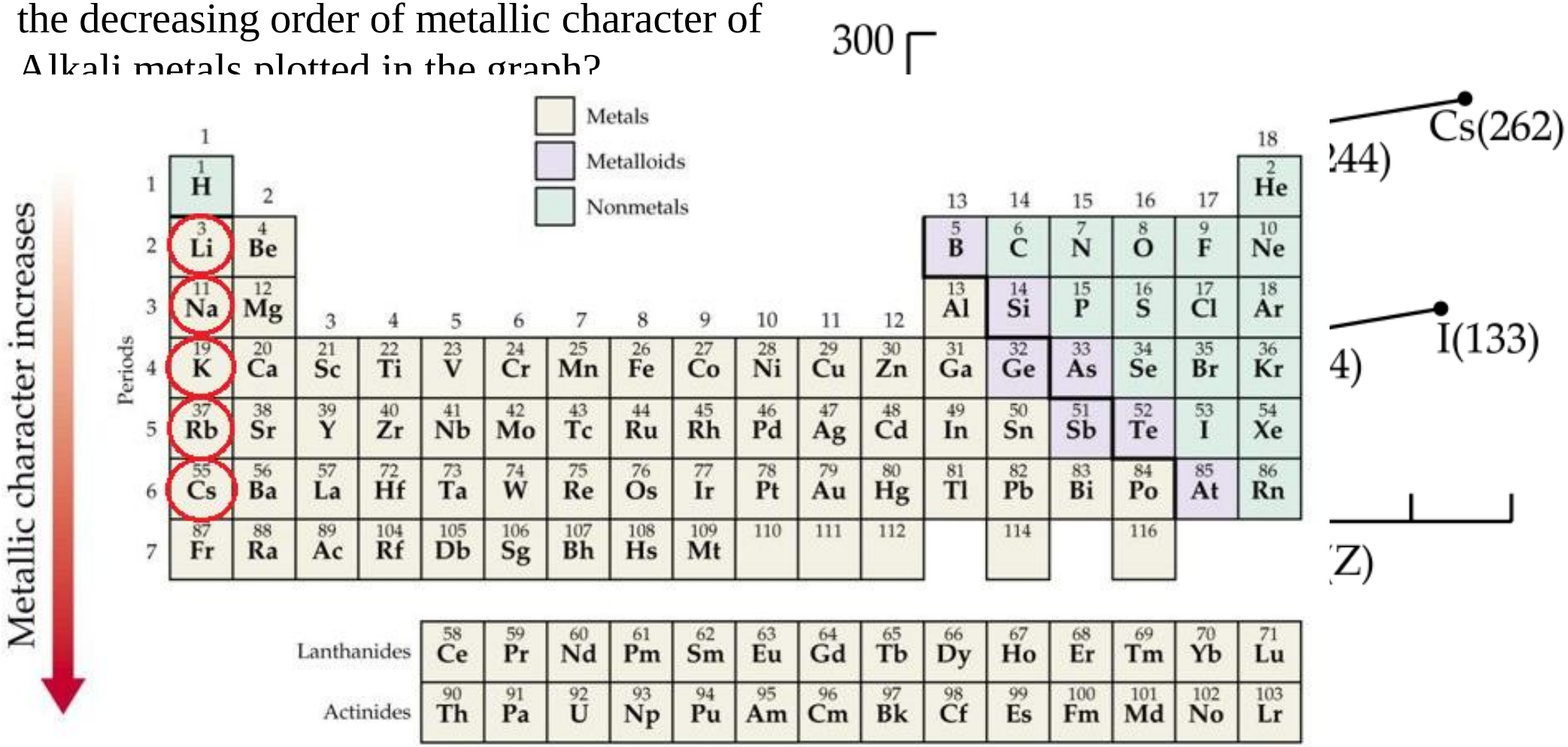
Metallic Character

The ability of an atom to donate electrons and form positive ion (cation) is known as electropositivity or metallic character. Down the group, metallic character increases due to increase in atomic size and across the period, from left to right electropositivity decreases due to decrease in atomic size.

Non-Metallic Character

The ability of an atom to accept electrons to form a negative ion (anion) is called non-metallic character or electronegativity. The elements having high electro-negativity have a higher tendency to gain electrons and form anion. Down the group, electronegativity decreases due to increase in atomic size and across the period, from left to right electronegativity increases due to decrease in atomic size.

(i) Which of the following correctly represents the decreasing order of metallic character of Alkali metals plotted in the graph?



(ii) Hydrogen is placed along with Alkali metals in the modern periodic table though it shows non-metallic character

(a) as Hydrogen has one electron & readily loses electron to form negative ion

(b) as Hydrogen can easily lose one electron like alkali metals to form positive ion

(c) as Hydrogen can gain one electron easily like Halogens to form negative ion

(d) as Hydrogen shows the properties of non-metals

(b) as Hydrogen can easily lose one electron like alkali metals to form positive ion

(iii) Which of the following has highest electronegativity?

(a) F (b) Cl (c) Br (d) I

Electronegativity decreases down the group due to increase in atomic radius/ tendency to gain electron decreases

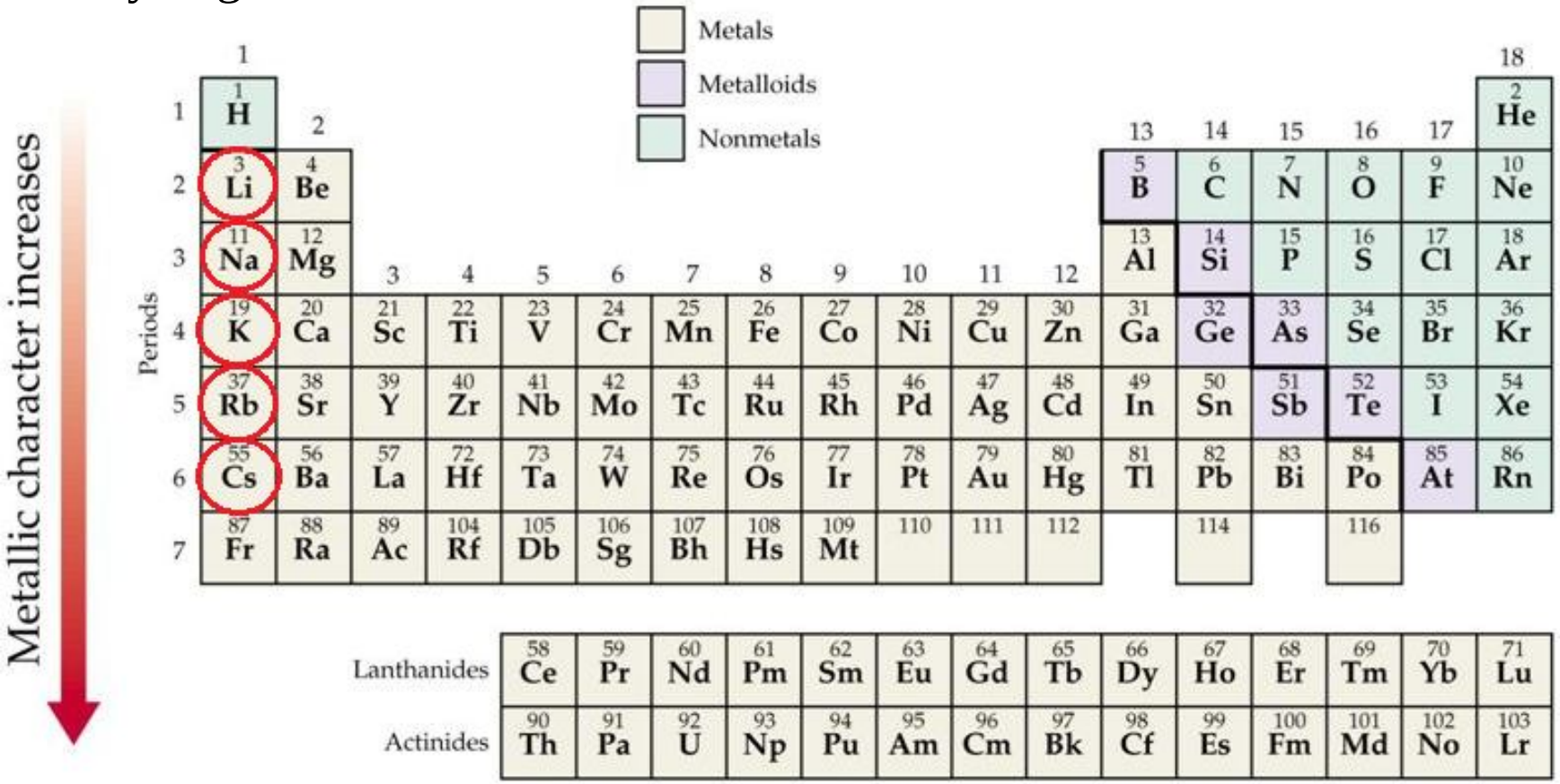
(iv) I n the grou

(a) E

(b) E e

(c) E tendency t

(d) E ns b



(v) Which of the following reason correctly justifies that “Fluorine (72pm) has smaller atomic radius than Lithium (152pm)”?

(a) F and Li are in the same group. Atomic size increases down the group

(b) F and Li are in the same period. Atomic size increases across the period due to increase in

(c) F

(d) F es from l

(d) ases fro