

Periodic Classification of Elements

35. Out of Li and K, which will have stronger metallic character and why?

2014/2015 [1 Mark]

Potassium (K) will have stronger metallic character than lithium (Li) because as we move from top to bottom in a group, the size increases the ease of liberation of electrons.

36. Out of the following elements:

He(2); F(9); Cl(17); Ar(18)

(a) Pair the elements having similar chemical properties.

(b) State the group number of each pair.

(c) Name one other element belonging to each of these groups.

2014/2015 [3 Marks]

	Electronic configuration	Valency
${}^2\text{He}$	= 2	0
${}^9\text{F}$	= 2, 7	1
${}^{17}\text{Cl}$	= 2, 8, 7	1
${}^{18}\text{Ar}$	= 2, 8, 8	0

(a) (He and Ar), (F and Cl) have similar chemical properties.

(b) Group 18 and Group 17

(c) Neon (Ne) – Group 18

Bromine (Br) – Group 17

37. Give an example of

(a) a metal that is liquid at room temperature

(b) a non-metal that is liquid at room temperature

(c) an inert gas (Atomic Number < 20)

2014/2015 [3 Marks]

(a) Mercury (Hg)

(b) Bromine (Br)

(c) ${}_{(2)}\text{He}$, ${}_{(10)}\text{Ne}$, ${}_{(18)}\text{Ar}$ (*any one*)

38. Arrange giving reason for the following elements in increasing order of their atomic size:

(a) Be, O, F (Given that they belong to 2nd, 8th, and 9th groups and 2nd period respectively).

(b) I, Cl, F (Given that they belong to 5th, 3rd, and 2nd period respectively in the 17th group.)

(c) Mg, N, P (Given that Mg and P belong to 2nd and 15th group respectively of 3rd period and N belongs to 15th group of 2nd period).

2014/2015 [3 Marks]

(a) $\text{F} < \text{O} < \text{Be}$. This is because atomic size decreases across a period.

(b) $\text{F} < \text{Cl} < \text{I}$. This is because atomic size increases down the group.

(c) $\text{N} < \text{P} < \text{Mg}$. This is because atomic decreases across a period a period and

increases down the group.

39. The Periodic Table given below consists of elements with atomic numbers from 3 to 18. Some of the elements are shown by letters but the letters are not the usual symbols of the elements.

Element	A	B				C		
Atomic Number	11	12	13	14	15	16	17	18
Element		D		E			F	G

- (i) Write the electronic configuration of two elements which have similar chemical properties.
(ii) Which of these is a (a) metalloid, (b) noble gas?
(iii) Out of A and C, which one has greater atomic radius? Give reason.

2012/2014 [3 Marks]

- (i) Element B (4) : 2, 2; Element D (12) : 2, 8, 2
(ii) (a) Element E (14), (b) Element G (18)
(iii) Element A, because atomic radius decreases across a period due to increase in force of attraction between nucleus and electrons.
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