

## PERIODIC CLASSIFICATION OF ELEMENTS

## Choose the best Answer:

- What would be the IUPAC name for an element with atomic number 222?  
a) bibibium      b) bididium      c) didibium      d) bibibium
- The electronic configuration of the elements A and B are  $1s^2, 2s^2, 2p^6, 3s^2$  and  $1s^2, 2s^2, 2p^5$  respectively. The formula of the ionic compound that can be formed between these elements is  
a) AB      b)  $AB_2$       c)  $A_2B$       d) none of the above.
- The group of elements in which the differentiating electron enters the anti penultimate shell of atoms are called  
a) p-block elements      b) d-block elements  
c) s-block elements      d) f-block elements
- In which of the following options the order of arrangement does not agree with the variation of property indicated against it? (NEET 2016 Phase 1)  
a)  $I < Br < Cl < F$  (increasing electron gain enthalpy)  
b)  $Li < Na < K < Rb$  (increasing metallic radius)  
c)  $Al^{3+} < Mg^{2+} < Na^+ < F^-$  (increasing ionic size)  
d)  $B < C < O < N$  (increasing first ionisation enthalpy)
- Which of the following elements will have the highest electronegativity?  
a) Chlorine      b) Nitrogen      c) Cesium      d) Fluorine
- Various successive ionisation enthalpies (in  $\text{kJ mol}^{-1}$ ) of an element are given below.

$IE_1$	$IE_2$	$IE_3$	$IE_4$	$IE_5$
577.5	1,810	2,750	11,580	14,820

The element is

- a) phosphorus      b) Sodium      c) Aluminium      d) Silicon

7. In the third period the first ionization potential is of the order.

- a)  $\text{Na} > \text{Al} > \text{Mg} > \text{Si} > \text{P}$       b)  $\text{Na} < \text{Al} < \text{Mg} < \text{Si} < \text{P}$   
c)  $\text{Mg} > \text{Na} > \text{Si} > \text{P} > \text{Al}$       d)  $\text{Na} < \text{Al} < \text{Mg} < \text{P} < \text{Si}$

8. Identify the wrong statement.

- a) Amongst the isoelectronic species, smaller the positive charge on cation, smaller is the ionic radius  
b) Amongst isoelectronic species greater the negative charge on the anion, larger is the ionic radius  
c) Atomic radius of the elements increases as one moves down the first group of the periodic table  
d) Atomic radius of the elements decreases as one moves across from left to right in the 2<sup>nd</sup> period of the periodic table.

9. Which one of the following arrangements represent the correct order of least negative to most negative electron gain enthalpy

- a)  $\text{Al} < \text{O} < \text{C} < \text{Ca} < \text{F}$       b)  $\text{Al} < \text{Ca} < \text{O} < \text{C} < \text{F}$   
c)  $\text{C} < \text{F} < \text{O} < \text{Al} < \text{Ca}$       d)  $\text{Ca} < \text{Al} < \text{C} < \text{O} < \text{F}$

10. The correct order of electron gain enthalpy with negative sign of F, Cl, Br and I having atomic number 9, 17, 35 and 53 respectively is

- a)  $\text{I} > \text{Br} > \text{Cl} > \text{F}$       b)  $\text{F} > \text{Cl} > \text{Br} > \text{I}$   
c)  $\text{Cl} > \text{F} > \text{Br} > \text{I}$       d)  $\text{Br} > \text{I} > \text{Cl} > \text{F}$

11. Which one of the following is the least electronegative element?

- a) Bromine      b) Chlorine      c) Iodine      d) Hydrogen

12. The element with positive electron gain enthalpy is

- a) Hydrogen      b) Sodium      c) Argon      d) Fluorine

13. The correct order of decreasing electronegativity values among the elements X, Y, Z and A with atomic numbers 4, 8, 7 and 12 respectively

- a)  $\text{Y} > \text{Z} > \text{X} > \text{A}$       b)  $\text{Z} > \text{A} > \text{Y} > \text{X}$   
c)  $\text{X} > \text{Y} > \text{Z} > \text{A}$       d)  $\text{X} > \text{Y} > \text{A} > \text{Z}$

14. Assertion: Helium has the highest value of ionisation energy among all the elements known

Reason: Helium has the highest value of electron affinity among all the elements known

- a) Both assertion and reason are true and reason is correct explanation for the assertion
  - b) Both assertion and reason are true but the reason is not the correct explanation for the assertion
  - c) Assertion is true and the reason is false
  - d) Both assertion and the reason are false
15. The electronic configuration of the atom having maximum difference in first and second ionisation energies is
- a)  $1s^2, 2s^2, 2p^6, 3s^1$                       b)  $1s^2, 2s^2, 2p^6, 3s^2$
- c)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^1$                       d)  $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$
16. Which of the following is second most electronegative element?
- a) Chlorine                  b) Fluorine                  c) Oxygen                  d) Sulphur
17.  $IE_1$  and  $IE_2$  of Mg are 179 and 348 kcal mol<sup>-1</sup> respectively. The energy required for the reaction  $Mg \rightarrow Mg^{2+} + 2 e^-$  is
- a) +169 kcal mol<sup>-1</sup>                      b) - 169 kcal mol<sup>-1</sup>
- c) + 527 kcal mol<sup>-1</sup>                      d) - 527 kcal mol<sup>-1</sup>
18. In a given shell the order of screening effect is
- a)  $s > p > d > f$                   b)  $s > p > f > d$                   c)  $f > d > p > s$                   d)  $f > p > s > d$
19. Which of the following orders of ionic radii is correct?
- a)  $H^- > H^+ > H$                   b)  $Na^+ > F^- > O^{2-}$                   c)  $F > O^{2-} > Na^+$                   d) None of these
20. The First ionisation potential of Na, Mg and Si are 496, 737 and 786 kJ mol<sup>-1</sup> respectively. The ionisation potential of Al will be closer to
- a) 760 kJ mol<sup>-1</sup>                  b) 575 kJ mol<sup>-1</sup>                  c) 801 kJ mol<sup>-1</sup>                  d) 419 kJ mol<sup>-1</sup>

21. Which one of the following is true about metallic character when we move from left to right in a period and top to bottom in a group?
- a) Decreases in a period and increases along the group
  - b) Increases in a period and decreases in a group
  - c) Increases both in the period and the group
  - d) Decreases both in the period and in the group
22. How does electron affinity change when we move from left to right in a period in the periodic table?
- a) Generally increases
  - b) Generally decreases
  - c) Remains unchanged
  - d) First increases and then decreases
23. Which of the following pairs of elements exhibit diagonal relationship?
- a) Be and Mg
  - b) Li and Be
  - c) Be and B
  - d) Be and Al