

Electron affinity

- Electron affinity depends on
 - Atomic size
 - Nuclear charge
 - Atomic number
 - Atomic size and nuclear charge both
- Increasing order of electron affinity is
 - $N < O < Cl < Al$
 - $O < N < Al < Cl$
 - $Al < N < O < Cl$
 - $Cl < N < O < Al$
- The correct order of electron affinity of B, C, N, O is
 - $O > C > N > B$
 - $B > N > C > O$
 - $O > C > B > N$
 - $O > B > C > N$
- Which one has maximum electron affinity

| | |
|---------|----------|
| (a) N | (b) Be |
| (c) B | (d) Cl |
- The electron affinity for the inert gases is

| | |
|--------------|--------------|
| (a) Zero | (b) High |
| (c) Negative | (d) Positive |
- The electron affinities of halogens are $F = 322$, $Cl = 349$, $Br = 324$, $I = 295 \text{ kJ mol}^{-1}$. The higher value for Cl as compared to that of F is due to
 - Weaker electron-electron repulsion in Cl
 - Higher atomic radius of F
 - Smaller electronegativity of F
 - More vacant p -subshell in Cl
- Which one of the following is an incorrect statement
 - The ionisation potential of nitrogen is greater than that of oxygen
 - The electron affinity of fluorine is greater than that of chlorine
 - The ionisation potential of beryllium is greater than that of boron
 - The electronegativity of fluorine is greater than that of chlorine
- Electron affinity is the
 - Energy absorbed when an electron is added to an isolated atom in the gaseous state
 - Energy released when an electron is added to an isolated atom in the gaseous state
 - Energy required to take out an electron from an isolated gaseous atom
 - Power of an atom to attract an electron to itself
- The electron affinity values for the halogens show the following trend



- (a) $F < Cl > Br > I$
 (b) $F < Cl < Br < I$
 (c) $F > Cl > Br > I$
 (d) $F < Cl > Br < I$
10. Which element has maximum electron affinity
 (a) Na (b) S
 (c) Mg (d) Al
11. Which of the following has the least electron affinity in kJ mol^{-1}
 (a) Oxygen (b) Carbon
 (c) Nitrogen (d) Boron
12. Fluorine has low electron affinity than chlorine because of
 (a) Smaller radius of fluorine, high density
 (b) Smaller radius of chlorine, high density
 (c) Bigger radius of fluorine, less density
 (d) Smaller radius of chlorine, less density
13. For electron affinity of halogens which of the following is correct
 (a) $Br > F$ (b) $F > Cl$
 (c) $Br < Cl$ (d) $F > I$
14. Ionic compounds are formed most easily with
- (a) Low electron affinity, high ionisation energy
 (b) High electron affinity, low ionisation energy
 (c) Low electron affinity, low ionisation energy
 (d) High electron affinity, high ionisation energy
15. In comparison with alkali metals, the electron affinity of halogens is
 (a) Very high
 (b) Very low
 (c) Nearly same
 (d) Exactly same
16. The electron affinity of
 (a) Carbon is greater than oxygen
 (b) Sulphur is less than oxygen
 (c) Iodine is greater than bromine
 (d) Bromine is less than chlorine
17. The amount of energy which is released due to addition of extra electron to the outermost orbit of gaseous atom is called
 (a) Electron capacity
 (b) Electron affinity
 (c) Ionisation potential
 (d) Electronegativity
18. Which of the following species has the highest electron affinity
 (a) F (b) O





- (c) O^- (d) Na^+
19. The electron affinity values (in $kJmol^{-1}$) of three halogens X, Y and Z are respectively $-349, -333$ and -325 . Then X, Y and Z are respectively
 (a) F_2, Cl_2 and Br_2
 (b) Cl_2, F_2 and Br_2
 (c) Cl_2, Br_2 and F_2
 (d) Br_2, Cl_2 and F_2
20. Nitrogen has lower electron affinity than its preceding element carbon because
 (a) Electron affinity decreases along a period
 (b) Electron affinity generally increases along a period
 (c) Nitrogen atom has half filled p -orbital
 (d) Nitrogen is a p -block element
21. Electron affinity is the lowest for
 (a) Nitrogen (b) Carbon
 (c) Oxygen (d) Sulphur
22. Which one of the elements has the maximum electron affinity
 (a) F (b) Cl
 (c) Br (d) I
23. Which among the following factors is the most important in making fluorine the strongest oxidizing halogen
- (a) Hydration enthalpy
 (b) Ionization enthalpy
 (c) Electron affinity
 (d) Bond dissociation energy
24. Which of the following pairs show reverse properties on moving along a period from left to right and from top to down in a group
 (a) Nuclear charge and electron affinity
 (b) Ionisation energy and electron affinity
 (c) Atomic radius and electron affinity
 (d) None of these
25. Which of the following properties show gradual decrease with increase in atomic number across a period in the periodic table
 (a) Electron affinity
 (b) Ionization potential
 (c) Electronegativity
 (d) Size of atom
26. Order of electron affinity of F, Cl, Br and I is .
 (a) $F < Cl > Br > I$
 (b) $F > Cl > Br > I$
 (c) $F < Cl < Br < I$
 (d) $F > Cl < Br > I$
27. Which one of the following arrangements represents the correct order of electron gain enthalpy (with



negative sign) of the given atomic species.

- (a) $Cl < F < S < O$
- (b) $O < S < F < Cl$
- (c) $S < O < Cl < F$
- (d) $F < Cl < O < S$

