Electron affinity and Electronegativity

1. A compound AB whose electronegativity difference is 1.9. Atomic radius of A and B are 4 and 2 Å. The distance between A & B mean d_{A-B} is –

(A) 6.2Å (B) 5.82Å (C) 6.9Å (D) 7.5Å

2. Which of the following element has the lowest value of electron affinity -

(A) Carbon (B) Oxygen (C) Fluorine (D) Neon

3. In which case the energy released is minimum:-

(A) $Cl \rightarrow Cl^-$ (B) $P \rightarrow P^-$ (C) $N \rightarrow N^-$ (D) $C \rightarrow C^-$

4. Electron addition would be easier in :-

(A) O (B) O^+ (C) O^- (D) O^{+2}

5. Process in which maximum energy is released:-

(A) $O \rightarrow O^{-2}$ (B) $Mg^+ \rightarrow Mg^{+2}$ (C) $Cl \rightarrow Cl^-$ (D) $F \rightarrow F^-$

6. Select correct order of IE_3 :

(A) O > C > N > B (B) B > C > N > O (C) O > N > C > B (D) O > C > B > N

7. In the formation of a chloride ion, from an isolated gaseous chlorine atom, 3.8 eV energy is released, which would be equal to :-

(A) Electron affinity of Cl^- (B) Ionisation potential of Cl

(C) Electronegativity of Cl (D) Ionisation potential of Cl^-

8. The electron gain enthalpies of halogens are as given below.

F = – 332, Cl = – 349, Br = – 324, I = – 295 kJ mol^{-1}.

The less negative value for F as compared to that of Cl is due to :

(A) Strong electron-electron repulsions in the compact 2p sub shell of F.

(B) Weak electron-electron repulsions in the bigger 3p sub shell of Cl

(C) Smaller electronegativity value of F than Cl

(D) (A) & (B) both

9. Which of the following represent(s) the correct order of electron affinities ?

(A) F > Cl > Br > I (B) C < N < O < F (C) N < C < O < F (D) C < Si > P > N

10. The process(es) requiring the absroption of energy is/are :

(A) $Cl \rightarrow Cl^-$ (B) $S \rightarrow S^{2-}$ (C) $H \rightarrow H^-$ (D) $Ar \rightarrow Ar^-$

11. An element which have configuration ns^2np^5 of its outermost shell has highest electron affinity in its group of periodic table, what is the value of principle quantum number (n) of its penultimate shell :

(A) One (B) Two (C) Three (D) Four

12. Select correct order of electron affinity

(A) F > Cl > O > S (B) Cl > F > O > S (C) Cl > F > S > O (D) Cl > S > F > O

13. Highest electron affinity is shown by

(A) F^- (B) Cl^- (C) Li^+ (D) Na^+

14. Electron addition would be easier in

(A) S (B) S^+ (C) S^- (D) S^{+2}

15. Alkaline earth metals always form dipositive ions due to

(A) $IE_2 - IE_1 > 10$ eV (B) $IE_2 - IE_1 = 17$ eV (C) $IE_2 - IE_1 < 10$ eV (D) None of these

16. The element with least electronegative nature is –

(A) Cu (B) Cs (C) Cr (D) Ba

17. An element X have electronegativity on Paulings scale is 2.5, select correct about polarity of bond in :

(A) $\overset{\delta-}{H}—\overset{\delta+}{X}$ (B) $\overset{\delta+}{N}—\overset{\delta-}{X}$ (C) $\overset{\delta+}{Br}—\overset{\delta-}{X}$ (D) $\overset{\delta+}{B}—\overset{\delta-}{X}$

18. The nomenclature of ICl is iodine monochloride because of

(A) Size of I < Size of Cl (B) Atomic number of I > Atomic number of Cl

(C) E.N. of I < E.N. of Cl (D) E. A. of I < E. A. of Cl

19. The amount of energy released for the process $X_{(g)} + e^- \rightarrow X^-_{(g)}$ is minimum and maximum respectively for :–

(a) F (b) Cl (c) O (d) P

Correct answer is :–

(A) c & a (B) d & b (C) a & b (D) c & b

20. The ionization energy and electron affinity of an element are 17.42 and 3.42 eV respectively. Then the electronegativity of the element on Pauling scale is -

(A) 10.435 (B) 3.721 (C) 1.86 (D) 2.88

21. The correct order of electron affinity of B, C, N, O is :-

(A) O > C > N > B (B) B > N > C > O (C) O > C > B > N (D) O > B > C > N

22. Elements P, Q, R and S belong to the same group. The oxide of P is acidic, oxide of Q and R are amphoteric while the oxide of S is basic. Which of the following elements is the most electropositive?

(A) P (B) Q (C) R (D) S

23. For an element 'A', the first ionisation energy will be numerically equal to :

(A) EA of A^+ (B) EA of A^{2+} (C) IE of A^{2+} (D) None of these

24. Which is the correct order of electronegativity –

(A) Cl > S > P > Si (B) Si > Al > Mg > Na (C) F > Cl > Br > I (D) All

25. Electronegativity decreases in the order –

(A) F > O > N > Br (B) F > Br > N > O (C) F > O > Br > N (D) F > Br > O > N

SUBJECTIVES

26. Explain why a few elements such as Be, N & He have positive electron gain enthalpies while majority of elements do have negative values.

Similar questions belongs to NCERT Text Book

Excercise - 3.20, 3.22

Answers

RACE # 09

1. (B) **2.** (D) **3**. (C) **4.** (D) **5**. (C) **6.** (A) **7.** (D) **8.** (D) **9.** (C) **10.** (B)
11. (B) **12.** (C) **13.** (C) **14.** (D) **15.** (C) **16.** (B) **17.** (D) **18**. (C) **19.** (B) **20.** (B)
21. (C) **22**. (D) **23.** (A) **24.** (D) **25.** (A)