Chapter 01 Periodic Table and Periodic Properties

TOPIC WISE QUESTIONS

HISTORY OF PERIODIC TABLE

Q.1 Which of the following is/are Doeberiners triad :
(a) P, As, Sb (b) Cu, Ag, Au
(c) Fe, Co, Ni (d) S, Se, Te
Correct answer is :
(1) a and b (2) b and c
(3) a and d (4) All

Q.2 Which of the following sets of elements follows Newland's octave rule :
(1) Be, Mg, Ca (2) Na, K, Rb
(3) F, Cl, Br (4) B, Al, Ga

Q.3 The places that were left empty by Mendeleef were, for:
(1) Aluminium& Silicon
(2) Galium and germinium
(3) Arsenic and antimony
(4) Molybdenum and tungstun

Q.4 Elements which occupied position in the lothermeyer curve, on the peaks, were :
(1) Alkali metals
(2) Highly electro positive elements
(3) Elements having large atomic volume
(4) All

Q.5 Which of the following statement is wrong :
(1) No inert gas is present in 7^{th} period
(2) 3^{rd} period contains 18 elements
(3) 1^{st} period contains two non metals
(4) In p–block, metal, nonmetal and metalloids are present

Q.6 In the Doberiener's triad all three element have same:
(1) Electronic configuration
(2) Properties
(3) Number of shells
(4) (1) & (2) both

Q.7 Which statement is wrong for the long form of periodic table :
(1) Number of periods are 7 and groups 18
(2) No. of valence shell electrons in a period are same
(3) III^{rd} B group contains 32 elements
(4) Lanthanides and actinides are placed in same group

Q.8 Which pair of successive elements follows increasing order of atomic weight in mendeleev's periodic table
(1) Argon and potassium
(2) Lithium and Berrilium
(3) Cobalt and nickel
(4) Tellurium and iodine

STRUCTURE OF PERIODIC TABLE

Q.9 Choose the s-block element from the following:
(1) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^5, 4s^1$
(2) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$
(3) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^1$
(4) all of the above

Q.10 If there were 10 periods in the periodic table then how many elements would this period can maximum comprise of.
(1) 50 (2) 72 (3) 32 (4) 98

Q.11 If each orbital can hold a maximum of three electrons, the number of elements in 9^{th} period of periodic table (long form) are
(1) 48 (2) 162 (3) 50 (4) 75

Q.12 The electronic configuration of an element is $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$. The atomic number and the group number of the element 'X' which is just below the above element in the periodic table are respectively.
(1) 24 & 6 (2) 24 & 15
(3) 34 & 16 (4) 34 & 8

Q.13 The element with atomic number Z = 115 will be placed in :
(1) 7^{th} period, IA group
(2) 8^{th} period, IVA group
(3) 7^{th} period, VA group
(4) 6^{th} period, VB group

Q.14 In 6th period of the modern periodic table, electronic energy levels is in the order :
(1) 6s, 4f, 5d, 6p (2) 6s, 6p, 4f, 5d
(3) 4f, 5d, 6s, 6p (4) None

Q.15 Out of first 100 elements no. of elements having electrons in 3d orbitals (in their complete electronic configuration) are :
(1) 80 (2) 100 (3) 40 (4) 60

Q.16 The atom having the valence shell electronic configuration $4s^2\ 4p^2$ would be in:
(1) Group II A and period 3
(2) Group II B and period 4
(3) Group IV A and period 4
(4) Group IV A and period 3

Q.17 The electronic configuration of transition elements is exhibited by :
(1) $ns^{1-2}(n-1)d^{1-10}$ (2) $ns^2\ (n-1)\ d^{10}$
(3) $(n-1)d^{10}s^2$ (4) ns^2np^5

Q.18 Which of the following electronic configurations in the outermost shell is characteristic of alkali metals
(1) $(n–1)\ s^2p^6\ ns^2p^1$ (2) $(n–1)\ s^2p^6d^{10}\ ns^1$
(3) $(n–1)\ s^2p^6\ ns^1$ (4) $ns^2np^6\ (n–1)d^{10}$

Q.19 The fourteen elements collectively placed in 3^{rd} group and 7^{th} period are called :
(1) Typical elements
(2) Representative element
(3) Actinides
(4) Lanthenones

Q.20 An element which is recently discovered is placed in 7^{th} period and 10^{th} group. IUPAC name of the element will be :
(1) Unnilseptium (2) Ununnilium
(3) Ununbium (4) None

Q.21 Which of the following statement is wrong for the transition elements :
(1) Transition elements are placed from 3^{rd} to 6^{th} period.
(2) Last electron enters in (n – 1)d orbital
(3) Exhibits variable valency
(4) General electronic configuration is $(n-1)d^{1–10}\ ns^{1-2}$

Q.22 In the general electronic configuration - $(n–2)\ f^{1–14}\ (n-1)d^{0–1}\ ns^2$, if value of n = 7 the configuration will be of -
(1) Lanthenides
(2) Actinides
(3) Transition elements
(4) None

Q.23 Element with the electronic configuration given below, belong to which group in the periodic table $1s^2$, $2s^22p^6$, $3s^23p^63d^{10}$, $4s^24p^64d^{10}$, $5s^25p^3$
(1) 3^{rd} (2) 5^{th} (3) 15^{th} (4) 17^{th}

Q.24 $4d^35s^2$ configuration belongs to which group :
(1) IIA (2) IIB (3) V B (4) III B

Q.25 Which of the following general electronic configuration for transition elements is not correct
(1) $(n+1)\ s^{1–2}\ nd^{1–10}$
(2) $ns^{1–2}\ (n-1)d^{1-10}$(Where n = 2, 3, 4 .....)
(3) $ns^{0,1,2}\ (n–1)s^2\ p^6\ d^{1–10}$
(4) $(n-1)d^{1–10}\ ns^{0–2}$

Q.26 Which of the following electronic configuration belongs to inert gas elements :
(1) $ns^2\ (n-1)d^{10}$ (2) $ns^2\ (n-1)s^2p^6$
(3) $ns^2\ np^6$ (4) None

Q.27 The electronic configuration of an element is $1s^22s^22p^63s^23p^63d^{10}4s^1$. What is the atomic number of next element of the same group which is recently discovered :
(1) 20 (2) 119 (3) 111 (4) None

Q.28 From atomic number 58 to 71, elements are placed in :
(1) 5^{th} period and III A group
(2) 6^{th} period and III B group
(3) separate period and group
(4) 7^{th} period and IV B group

Q.29 Element X belongs to 4th period. It contains 18 and 1 electron in the penultimate and ultimate orbit. The X should be :
(1) normal element
(2) transition element

(3) inert gas
(4) inner - transition element

Q.30 Element with atomic number 56 belong to which block ?
(1) s (2) p (3) d (4) f

Q.31 Outer electronic configuration of K, Cu, and Cr are respectively
(1) $4s^1$, $3d^{10}$, $3d^5$ (2) $4s^2$, $3d^{10}$, $3d^4$
(3) $4s^1$, $3d^9$, $3d^4$ (4) $4s^1$, $3d^9$,$3d^4$

ATOMIC RADIUS & SCREENING EFFECTS

Q.32 Atomic radii of fluorine and neon in angstroms units are respectively :
(1) 1.60 and 1.60 (2) 0.72 and 1.60
(3) 0.72 and 0.72 (4) none of these

Q.33 The difference between ions and atoms is of :
(1) relative size (2) configuration
(3) presence of charge (4) all of the above

Q.34 Na^+ is smaller than Na atom because :
(1) Nucleus in each case contains different nucleons
(2) Sodium atom has an electron lesser than sodium ion
(3) Sodium atom has 11 electrons and sodium ion has 10 electrons
(4) The force of attractions is less in Na^+ than in Na atom

Q.35 The ionic radii of a cation is always :
(1) less than atomic radii
(2) more than atomic radii
(3) equal to atomic radii
(4) cannot be predicted

Q.36 The ion having biggest size is
(1) F^- (2) Cl^- (3) Br^- (4) I^-

Q.37 Which of the following has largest size ?
(1) Na (2) Na^+ (3) Mg (4) Mg^{2+}

Q.38 Which of the following atoms has the largest atomic radius ?
(1) Cs (2) Ba (3) Pb (4) Cu

Q.39 An element M has an atomic number 9 and atomic mass 19. Its ion will be represented by
(1) M (2) M^{2+} (3) M^- (4) M^{2-}

Q.40 Which one of the following is smallest in size ?
(1) Na^+ (2) O^{2-} (3) N^{3-} (4) F^-

Q.41 Which of the following is the smallest cation ?
(1) Na^+ (2) Mg^{2+} (3) Ca^{2+} (4) Al^{3+}

Q.42 In the isoelectronic species, the ionic radii (A) of N^{3-}, O^{2-} and F^- are respectively given by
(1) 1.36, 1.40, 1.71 (2) 1.36, 1.71, 1.40
(3) 1.71, 1.40, 1.36 (4) 1.71, 1.36, 1.40

Q.43 Chloride ion and potassium ion are isoelectronic. Then :
(1) their sizes are same
(2) Cl^- ion is bigger than K^+ ions
(3) K^+ ion is relatively bigger
(4) Their sizes depend on other cation and anion

Q.44 The formula for effective nuclear charge is (ifσ is screening constant)
(1) $Z - \sigma$ (2) $Z + \sigma$ (3) $Z\,\sigma^{-1}$ (4) $Z\,\sigma$

Q.45 Effective nuclear charge in group generally :
(1) Increases down the group
(2) Decreases down the group
(3) Remains constant
(4) First increases than decreases

Q.46 In sodium atom the screening is due to :
(1) $3s^2$, $3p^6$ (2) $2s^1$
(3) $1s^2$, $2s^2$, $2p^6$ (4) $1s^2$, $2s^2$

Q.47 The screening effect of d- electrons is :
(1) Equal to the p - electrons
(2) Much more than p - electrons
(3) Same as f - electrons
(4) Less than p - electrons

Q.48 If the difference in atomic size of :
Na – Li = x Rb – K = y Fr – Cs = z
Then correct order will be:
(1) x = y = z (2) x > y > z
(3) x < y < z (4) x < y << z

Q.49 The correct order of size would be:
(1) Ni < Pd ≃ Pt (2) Pd < Pt < Ni
(3) Pt > Ni > Pd (4) Pd > Pt > Ni

Q.50 Which of the following order of radii is correct
(1) Li < Be < Mg (2) $H^+ < Li^+ < H^-$
(3) O < F < Ne (4) $Na^+ > F^- > O^{-2}$

Q.51 Which of the following is not different for an atom and its corresponding ion :
(1) Number of electrons
(2) Nuclear charge
(3) Ionization energy

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(4) Size

Q.52 Which group of atoms have nearly same atomic radius:
(1) Na, K, Rb, Cs (2) Li, Be, B, C
(3) Fe, Co, Ni (4) F, Cl, Br, I

Q.53 Which of the following has largest radius :
(1) $1s^2, 2s^2, 2p^6, 3s^2$
(2) $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$
(3) $1s^2, 2s^2, 2p^6, 3s^2, 3p^3$
(4) $1s^2, 2s^2, 2p^6, 3s^2, 3p^5$

Q.54 Which has the lowest anion to cation size ratio-
(1) LiF (2) NaF (3) CsI (4) CsF

Q.55 Arrange the elements in increasing order of atomic radius Na, Rb, K, Mg :
(1) Na, K, Mg, Rb (2) K, Na, Mg, Rb
(3) Mg, Na, K, Rb (4) Rb, K, Mg, Na

Q.56 Which of the following order of atomic/ionic radius is not correct :
(1) $I^- > I > I^+$ (2) $Mg^{+2} > Na^+ > F^-$
(3) $P^{+5} < P^{+3}$ (4) Li > Be > B

Q.57 In which of the following compound, distance between two nuclei is maximum :
(1) CsF (2) KI (3) CsI (4) LiI

Q.58 In the lithium atom screening effect of valence shell electron is caused by-
(1) Electrons of K and L shell
(2) Electrons of K shell
(3) Two electrons of 1st and one of 2nd shell
(4) None

Q.59 The radius of potassium atom is 0.203 nm. The radius of the potassium ion in nanometer will be:
(1) 0.133 (2) 0.231 (3) 0.234 (4) 0.251

Q.60 S^{-2} is not isoelectronic with :
(1) Ar (2) Cl^- (3) HS^- (4) Ti^{+3}

Q.61 The best reason to account for the general tendency of atomic diameters to decrease as the atomic numbers increase within a period of the periodic table is the fact that
(1) Outer electrons repel inner electrons
(2) Closer packing among the nuclear particles is achieved
(3) The number of neutrons increases
(4) The increasing nuclear charge exerts a greater attractive force on the electrons

Q.62 In an anion :
(1) Number of proton decreases
(2) Protons are more than electrons
(3) Effective nuclear charge is more
(4) radius is larger than neutral atom

Q.63 Maximum size of first member of a period is due to
(1) Maximum number of shells
(2) Maximum screening effect
(3) Minimum Z_{eff}
(4) All

Q.64 Which of the following ion has largest size :
(1) F^- (2) Al^{+3} (3) Cs^+ (4) O^{-2}

Q.65 In which of the following pair radii of second species is smaller than that of first species :
(1) Li, Na (2) Na^+, F^-
(3) N^{-3}, Al^{+3} (4) Mn^{+7}, Mn^{+4}

Q.66 Which of the following orders of ionic radii are correct :
(a) Li < Be < Na (b) Ni < Cu < Zn
(c) Ti > V > Cr (d) Ti > Zr $\simeq$ Hf
Correct answer is :
(1) All (2) a, b (3) b, c (4) b, d

IONISATION POTENTIAL

Q.67 Correct orders of I st I.P. are :
(a) Li < B < Be < C (b) O < N < F
(c) Be < N < Ne
(1) a, b (2) b, c (3) a, c (4) a, b, c

Q.68 The second ionisation potentials in electron volts of oxygen and fluorine atoms are respectively given by :
(1) 35.1, 38.3 (2) 38.3, 38.3
(3) 38.3, 35.1 (4) 35.1, 35.1

Q.69 A sudden large jump between the values of 2nd and 3rd IP of an element would be associated with the electronic configuration :
(1) $1s^2, 2s^2\ 2p^6, 3s^1$
(2) $1s^2, 2s^2\ 2p^6, 3s^2\ 3p^5$
(3) $1s^2, 2s^2\ 2p^6, 3s^2\ 3p^2$
(4) $1s^2, 2s^2\ 2p^6\ 3s^2$

Q.70 Compared to the first ionisation potential, the value of second ionisation potential of an element is :
(1) Negligible (2) Smaller
(3) Greater (4) Double

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Q.71 In which of the following pairs, the ionisation energy of the first species is less than that of the second :
(1) O^-, O^{2-} (2) S, P (3) N, P (4) Be^+, Be

Q.72 Least ionisation potential will be of :
(1) Be^{3+} (2) H (3) Li^{+2} (4) He^+

Q.73 Ionisation energy increases in the order :
(1) Be, B, C, N (2) B, Be, C, N
(3) C, N, Be, B (4) N, C, Be, B

Q.74 Mg forms Mg(II) because of :
(1) The oxidation state of Mg is + 2
(2) Difference between $I.P_1$ and $I.P_2$ is greater than 16.0 eV
(3) There are only two electrons in the outermost energy level of Mg
(4) Difference between $I.P_1$ and $I.P_2$ is less than 11 eV

Q.75 IP_1 and IP_2 of Mg are 178 and 348 K. cal mol^{-1}. The enthalpy required for the reaction $Mg \rightarrow Mg^{2+} + 2e^-$ is :
(1) + 170 K.cal (2) + 526 K.cal
(3) - 170 K.cal (4) - 526 K.cal

Q.76 IP is influenced by -
(1) Size of atom
(2) Effective nuclear charge
(3) Electrons present in inner shell
(4) All

Q.77 Highest ionisation potential in a period is shown by
(1) Alkali metals
(2) Noble gases
(3) Halogens
(4) Representative elements

Q.78 Which of the following decreases in going down the halogen group :
(1) Ionic radius
(2) Atomic radius
(3) Ionisation potential
(4) Boiling point

Q.79 Minimum first ionisation energy is shown by which electronic configuration:
(1) $1s^2, 2s^2, 2p^5$
(2) $1s^2, 2s^2, 2p^6, 3s^2, 3p^2$
(3) $1s^2, 2s^2, 2p^6, 3s^1$
(4) $1s^2, 2s^2, 2p^6$

Q.80 The IP_1, IP_2, IP_3, IP_4 and IP_5 of an element are 7.1, 14.3, 34.5, 46.8, 162.2 eV respectively. The element is likely to be:
(1) Na (2) Si (3) F (4) Ca

Q.81 With reference to ionisation potential which one of the following sets is correct :
(1) Li > K > B (2) B > Li > K
(3) Cs > Li > K (4) Cs < Li < K

Q.82 Successive ionisation energies of an element 'X' are given below (in K. Cal)

IP_1	IP_2	IP_3	IP_4
165	195	556	595

Electronic configuration of the element 'X' is:
(1) $1s^2, 2s^2 2p^6, 3s^2 3p^2$ (2) $1s^2, 2s^1$
(3) $1s^2, 2s^2 2p^2$ (4) $1s^2, 2s^2 2p^6, 3s^2$

Q.83 The ionisation energy of B and Al as compared to Be and Mg are :
(1) Lower (2) Higher
(3) Equal (4) None of these

Q.84 II^{nd} IP of which of the element is maximum–
(1) Lithium (2) Oxygen
(3) Nitrogen (4) Fluorine

Q.85 Which has the lowest IE :
(1) $3d^2$ (2) $4s^1$ (3) $3p^3$ (4) $2p^6$

Q.86 The energy needed to remove one electron from unipositive ion is abbreviated as :
(1) I^{st} I.P. (2) 3^{rd} I.P. (3) 2^{nd} I.P. (4) 1^{st} E.A.

Q.87 Which of the following has 2^{nd} IP < I^{st} IP
(1) Mg (2) Ne (3) C (4) None

Q.88 Among the following elements (Whose electronic configuration is given below) the one having the highest ionisation energy is
(1) (Ne) $3s^2 3p^3$ (2) (Ne) $3s^2 3p^4$
(3) (Ne) $3s^2 3p^5$ (4) (Ar) $3d^{10} 4s^2 4p^2$

Q.89 Out of Na^+, Mg^{+2}, O^{-2} and N^{-3}, the pair of species showing minimum and maximum IP would be.
(1) Na^+, Mg^{+2} (2) Mg^{+2}, N^{-3}
(3) N^{-3}, Mg^{+2} (4) O^{-2}, N^{-3}

Q.90 If the graph is plotted between atomic numbers and ionisation potential. Which group of element occupy the lowest position on the curve :
(1) Alkaline earth metal
(2) Inert gas

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(3) Actinides (4) Alkali metals

Q.91 The element having highest I.P. in the two series C, N, O and Si, P, S :
(1) P (2) N (3) S (4) O

Q.92 Out of I, Fe, H and Cl the pair of species showing minimum and maximum IP would be :
(1) H, Fe (2) I, Cl (3) Fe, H (4) I, H

Q.93 Factor which does not affects the ionisation potential
(1) Atomic size
(2) Bond order
(3) Effective nuclear charge
(4) Shielding effect

Q.94 Lowest IP will be shown by the element having the configuration :
(1) [He] $2s^2$ (2) $1s^2$
(3) [He] $2s^2$ $2p^2$ (4) [He] $2s^2$ $2p^5$

Q.95 The strongest reducing agent among the following is :
(1) Na (2) Mg (3) Al (4) K

Q.96 Which ionisation potential (IP) in the following equations involves the greatest amount of energy:
(1) $K^+ \rightarrow K^{+2} + e^-$ (2) $Li^+ \rightarrow Li^{+2} + e^-$
(3) $Fe \rightarrow Fe^+ + e^-$ (4) $Ca^+ \rightarrow Ca^{+2} + e^-$

Q.97 Values of first four ionisation potential of an elements are 68, 370, 400, 485. It belongs to which of the following electronic configuration:
(1) $1s^2$ $2s^1$ (2) $1s^2$ $2s^2$ $2p^1$
(3) $1s^2$ $2s^2$ $2p^6$ $3s^1$ (4) (1) and (3) both

Q.98 Fe^{+3} is more stable than Fe^{+2} the reason is :
(1) ΔIP is less than 11 eV
(2) More stable core in Fe^{+3}
(3) Inert pair effect
(4) (1) & (2) both are correct

Q.99 In which case the maximum energy is needed in the formation of monopositive gaseous ion :
(1) 1 mole of Li atoms
(2) 1 mole of Na atoms
(3) 1 mole of Cs atoms
(4) 1 mole of Be atoms

Q.100 (a) $M^-_{(g)} \rightarrow M_{(g)}$ (b) $M_{(g)} \rightarrow M^+_{(g)}$
(c) $M^+_{(g)} \rightarrow M^{+2}_{(g)}$ (d) $M^{+2}_{(g)} \rightarrow M^{+3}_{(g)}$
Minimum and maximum I.P. would be of :
(1) a, d (2) b, c (3) c, d (4) d, a

Q.101 In which of the following the energy change corresponds to first ionization potential :
(1) $X_{(g)} \rightarrow X^+_{(g)} + e$ (2) $X_{2(g)} \rightarrow X^+_{(g)} + e$
(3) $X_{(s)} \rightarrow X^+_{(g)} + e$ (4) $X_{(aq)} \rightarrow X^+_{(aq)} + e$

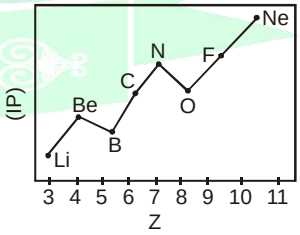
Q.102 Which of the following electronic configuration belongs to least and most metallic character respectively:
(a) $1s^2$ $2s^1$ (b) $5s^2$ $5p^5$
(c) $3s^2$ $3p^6$ $4s^1$ (d) $1s^2$ $2s^2$ $2p^5$
(1) a, b (2) d, c (3) b, a (4) c, d

Q.103 In the given process which oxidation state is more stable.
$M_{(g)} \rightarrow M_{(g)}^+$ $IE_1 = 7.9$ eV
$M_{(g)}^+ \rightarrow M_{(g)}^{+2}$ $IE_2 = 15.5$ eV
(1) M^+ (2) M^{+2} (3) Both (4) None

Q.104 Triad - I [N^{3-}, O^{-2}, Na^+]
Triad - II [N^+, C^+, O^+]
Choose the species of lowest IP from triad–I and highest IP from triad–II respectively
(1) N^{3-}, O^+ (2) Na^+, C^+ (3) N^{3-} N^+ (4) O^-, C^+

Q.105 The correct values of ionization energies (in kJ mol^{-1}) of Be, Ne, He and N respectively are
(1) 786, 1012, 999, 1256
(2) 1012, 786, 999, 1256
(3) 786, 1012, 1256, 999
(4) 786, 999, 1012, 1256

Q.106 Following graph shows variation of I.P. with atomic number in second period (Li – Ne). Value of I.P. of Na (11) will be :



(1) Above Ne
(2) Below Ne but above O
(3) Below Li
(4) Between N and O

Q.107 $M(g) \rightarrow M^+(g) + e^-$, $\Delta H = 100$ eV, $M(g)$ $M^{2+}(g) + 2e^-$, $\Delta H = 250$ eV which is incorrect statements :
(1) I_1 of M(g) is 100 eV
(2) I_2 of M(g) is 150 Ev

(3) I_2 of M(g) is 250 eV
(4) none

Q.108 In the plot of the first ionization energy against atomic number the peaks are occupied by :
(1) Inert gases
(2) Alkali metals
(3) Halogens
(4) Transition elements

Q.109 Which one of the following has highest ionization potential :
(1) Li^+ (2) Mg^+ (3) He (4) Ne

Q.110 In which of the following pairs, the ionization energy of the first species is less than that of the second
(1) N, P (2) Be^+, Be
(3) N, N^- (4) Ne, Ne^+

Q.111 The electronic configuration of some neutral atoms are given below :
(a) $1s^2\ 2s^1$ (b) $1s^2\ 2s^2\ 2p^3$
(c) $1s^2\ 2s^2\ 2p^5$ (d) $1s^2\ 2s^2\ 2p^6\ 3s^1$
In which of these electronic configuration would you expect to have highest :
(i) IE_1 (ii) IE_2
(1) C, A (2) B, A (3) C, B (4) B, D

ELECTRON AFFINITY

Q.112 In which case the energy released is minimum:
(1) $Cl \rightarrow Cl^-$ (2) $B \rightarrow B^-$
(3) $N \rightarrow N^-$ (4) $C \rightarrow C^-$

Q.113 In the formation of a chloride ion, from an isolated gaseous chlorine atom, 3.8 eV energy is released, which would be equal to :
(1) Electron affinity of Cl^-
(2) Ionisation potential of Cl
(3) Electronegativity of Cl
(4) Ionisation potential of Cl^-

Q.114 The correct order of electron affinity is :
(1) Be < B < C < N (2) Be < N < B < C
(3) N < Be < C < B (4) N < C < B < Be

Q.115 Which of the following statements is wrong for fluorine :
(1) It's standard reduction potential is highest
(2) It is most electronegative element
(3) Bond energy of F_2< Cl_2
(4) Fluorine has highest electron affinity

Q.116 Electron addition would be easier in :
(1) O (2) O^+ (3) O^- (4) O^{+2}

Q.117 Process $Na \xrightarrow{I} Na_{(g)} \xrightarrow{II} Na_{(s)}$
(1) In (I) energy released, (II) energy absorbed
(2) In both (I) and (II) energy is absorbed
(3) In both (I) and (II) energy is released
(4) In (I) energy absorbed, (II) energy released

Q.118 In the process $Cl_{(g)} + e^- \xrightarrow{\Delta H} Cl^-(g)$, ΔH is
(1) Positive (2) Negative
(3) Zero (4) None

Q.119 Process in which maximum energy is released:
(1) $O \rightarrow O^{-2}$ (2) $Mg^+ \rightarrow Mg^{+2}$
(3) $Cl \rightarrow Cl^-$ (4) $F \rightarrow F^-$

Q.120 $O_{(g)} + 2e^- \rightarrow O^{2-}_{(g)} \Delta H_{eg}$ = 744.7 KJ/mole. The positive value of ΔH_{eg} is due to :
(1) Energy is released to add on 1 e^- to O^{-1}
(2) Energy is required to add on 1 e^- to O^{-1}
(3) Energy is needed to add on 1e^- to O
(4) None of the above is correct

Q.121 Which of the following is energy releasing process
(1) $X^- \rightarrow X(g) + e^-$
(2) $O^-(g) + e^- \rightarrow O^{2-}$
(3) $O(g) \rightarrow O^+(g) + e^-$
(4) $O(g) + e^- \rightarrow O^-(g)$

Q.122 In which of the following process energy is liberated:
(1) $Cl \rightarrow Cl^+ + e$ (2) $HCl \rightarrow H^+ + Cl^-$
(3) $Cl + e \rightarrow Cl^-$ (4) $O^- + e \rightarrow O^{-2}$

Q.123 Element of which atomic number has highest electron affinity:
(1) 35 (2) 17 (3) 9 (4) 53

Q.124 Second electron affinity of an element is :
(1) Always exothermic
(2) Endothermic for few elements
(3) Exothermic for few elements
(4) Always endothermic

Q.125 The electron affinity
(1) Of carbon is greater than oxygen
(2) Of fluorine is less than iodine
(3) Of F is less than Cl
(4) Of S is less than oxygen

Q.126 The process requiring the absorption of energy is.
(1) $F \rightarrow F^-$ (2) $Cl \rightarrow Cl^-$
(3) $O \rightarrow O^{2-}$ (4) $H \rightarrow H^-$

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Q.127 Which of the following configuration will have least electron affinity.
(1) ns^2np^5 (2) ns^2np^2
(3) ns^2np^3 (4) ns^2np^4

Q.128 Energy absorbed in second electron addition in an atom is called.
(1) 1st IP (2) 2nd EA (3) 1st EA (4) 2nd IP

Q.129 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) N (d) B
Correct answer is :
(1) c & a (2) d & b (3) a & b (4) c & b

Q.130 Which of the following electronic configuration is expected to have highest electron affinity:
(1) $2s^2\ 2p^0$ (2) $2s^2\ 2p^2$
(3) $2s^2\ 2p^3$ (4) $2s^2\ 2p^1$

ELECTRONEGATIVITY

Q.131 The X – X bond length is 1.00 Å and C – C bond length is 1.54 Å. If electronegativities of 'X' and 'C' are 3.0 and 2.0 respectively, the C – X bond length is likely to be :
(1) 1.27 Å (2) 1.18 Å
(3) 1.08 Å (4) 1.28 Å

Q.132 Electronegativity scale of pauling is based upon :
(1) Bond length (2) Bond energy
(3) Atomic radius (4) Covalent radius

Q.133 The correct set of decreasing order of electronegativity is :
(1) Li, H, Na (2) Na, H, Li
(3) H, Li, Na (4) Li, Na, H

Q.134 Which of the following is affected by stable configuration of an atom :
(A) Electronegativity
(B) Ionisation potential
(C) Electron affinity
Correct answer is :
(1) Only electronegativity
(2) Only ionisation potential
(3) Electron affinity and ionisation potential
(4) All of the above

Q.135 Correct order of electronegativity of N, P, C and Si is :
(1) N < P < C < Si (2) N > C > Si > P
(3) N = P > C = Si (4) N > C > P > Si

Q.136 Polarity of a bond can be explained by :
(1) Electron affinity (2) Ionisation potential
(3) Electronegativity (4) All of the above

Q.137 Outermost electronic configuration of the most electronegative element is :
(1) ns^2np^3 (2) ns^2np^6 (3) ns^2 (4) ns^2np^5

Q.138 Electronegativity of the following elements increases in the order.
(1) O, N, S, P (2) P, S, N, O
(3) P, N, S, O (4) S, P, N, O

OMR																
	123.	①	②	③	④	127.	①	②	③	④	131.	①	②	③	④	135.	①	②	③	④
	124.	①	②	③	④	128.	①	②	③	④	131.	①	②	③	④	136.	①	②	③	④
	125.	①	②	③	④	129.	①	②	③	④	133.	①	②	③	④	137.	①	②	③	④
	126.	①	②	③	④	130.	①	②	③	④	134.	①	②	③	④	138.	①	②	③	④

Q.139 Mulliken scale of electronegativity uses the concept of :
(1) E. A. and EN of pauling
(2) E. A. and atomic size
(3) E.A. and I.P.
(4) E.A. and bond energy

Q.140 The pair with minimum difference in electronegativity is :
(1) F, Cl (2) C, H (3) P, H (4) Na, Cs

Q.141 Least electronegative element is :
(1) I (2) Br (3) C (4) Fr

Q.142 1 2 3 4
$H_3C – CH = C = CH_2$
In the given compound which carbon atom will show maximum electronegativity -
(1) Fourth
(2) First
(3) Third
(4) EN of all the carbon atoms is same

Q.143 Electronegativity values of elements X and Y are 3.8 and 1.8 respectively Ionic percentage of compound XY is :
(1) 50 (2) 46 (3) 64 (4) 25

Q.144 The nomenclature of ICl is iodine chloride because
(1) Size of I < Size of Cl
(2) Atomic number of I > Atomic number of Cl

(3) E.N. of I < E.N. of Cl
(4) E. A. of I < E. A. of Cl

Q.145 Among the following least and most polar bonds are respectively :
(a) C – I (b) N – O (c) C – F (d) P – F
(1) d and c (2) a and d
(3) b and d (4) b and c

Q.146 If the ionisation potential is IP, electron affinity is EA and electronegativity is x then which of the following relation is correct :
(1) 2X – EA – IP = 0 (2) 2EA – X – IP = 0
(3) 2IP – X – EA = 0 (4) All of the above

Q.147 Which of the following electronic configuration will have zero electronegativity-
(1) $1s^2\ 2s^2\ 2p^5$ (2) $1s^2\ 2s^2\ 2p^3$
(3) $1s^2$ (4) $1s^2\ 2s^2$

Q.148 The properties which are not common to both groups 1 and 17 elements in the periodic table are:
(1) Electropositive character increases down the groups
(2) Reactivity decreases from top to bottom in these groups
(3) Atomic radii increases as the atomic number increases
(4) Electronegativity decreases on moving down a group

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ANSWER KEY

TOPIC WISE QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	3	1	2	1	2	2	2	2	3	2	4	3	3	1	1
Que.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Ans.	3	1	3	3	2	1	2	3	3	2	3	3	2	1	1
Que.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
Ans.	1	2	4	3	1	4	1	1	3	1	4	3	2	1	3
Que.	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Ans.	3	4	2	1	2	2	3	1	4	3	2	3	2	1	4
Que.	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**
Ans.	4	4	3	3	3	3	4	3	4	3	2	2	2	4	2
Que.	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
Ans.	4	2	3	3	2	2	4	1	1	2	3	4	3	3	4
Que.	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**
Ans.	2	1	2	3	4	2	3	4	4	1	1	2	2	1	3
Que.	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
Ans.	3	3	1	1	4	1	3	4	2	4	4	3	2	3	2
Que.	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**	**133**	**134**	**135**
Ans.	4	3	2	4	3	3	3	2	2	2	2	2	3	3	4
Que.	**136**	**137**	**138**	**139**	**140**	**141**	**142**	**143**	**144**	**145**	**146**	**147**	**148**		
Ans.	3	4	2	3	3	4	3	2	3	2	1	3	2		

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