Ionisation energy

61. Which of the following transitions involves maximum amount of energy
(a) $M^-(g) \rightarrow M(g)$
(b) $M(g) \rightarrow M^+(g)$
(c) $M^+(g) \rightarrow M^{2+}(g)$
(d) $M^{2+}(g) \rightarrow M^{3+}(g)$

62. Which of the following species has lowest ionization potential
(a) O (b) O_2
(c) O_2^+ (d) O_2^-

63. Which of the following has minimum ionization energy
(a) *Ge* (b) *Se*
(c) *As* (d) *Br*

64. First I.P. of Mg is ..... than Al
(a) Less
(b) More
(c) Equal
(d) None of these

65. The element with highest value of ionization potential is
(a) Potassium (b) Helium
(c) Hydrogen (d) Xenon

66. Which has the highest second ionisation potential
(a) Nitrogen (b) Carbon
(c) Oxygen (d) Fluorine

67. In ionisation of hydrogen, the energy required is
(a) $13.6eV$ (b) $> 13.6eV$
(c) $< 13.6eV$ (d) $1.5eV$

68. Which of the following elements will have the lowest first ionisation energy
(a) Mg (b) Rb
(c) Li (d) Ca

69. In the long form of periodic table, the element having lowest ionisation potentials are present in
(a) I group (b) IV group
(c) VII group (d) Zero group

70. The process requiring the absorption of energy is
(a) $F \rightarrow F^-$ (b) $Cl \rightarrow Cl^-$
(c) $O \rightarrow O^{2-}$ (d) $H \rightarrow H^-$

71. In a period from Li to F, ionization potential
(a) Increases
(b) Decreases
(c) Remains same
(d) None of the above

72. Ionization energy increases in the order
(a) Be, B, C, N (b) B, Be, C, N
(c) C, N, Be, B (d) N, C, Be, B

73. A neutral atom will have the lowest ionization potential when its electronic configuration is
(a) $1s^1$
(b) $1s^2, 2s^2p^6$
(c) $1s^2, 2s^2p^2$
(d) $1s^2, 2s^2p^6, 3s^1$

74. Which has maximum first ionization potential
(a) *C* (b) *N*
(c) *B* (d) *O*

75. Which one of the following elements has the highest ionisation energy
(a) *Na* (b) *Mg*
(c) *C* (d) *F*

76. Order of first ionization potentials of elements *Li, Be, B, Na* is
(a) *Li* > *Be* >*B* > *Na*
(b) *Be* >*B* > *Li* > *Na*
(c) *Na* > *Li* > *B* > *Be*
(d) *Be* > *Li* > *B* > *Na*

77. The ionization energy of nitrogen is larger than that of oxygen because of
(a) Greater attraction of electrons by the nucleus
(b) The size of nitrogen atom being smaller
(c) The half-filled p -orbitals possess extra stability
(d) Greater penetration effect

78. If the IP of Na is 5.48 *eV*, the ionisation potential of K will be
(a) Same as that of Na (b) 5.68 *eV*
(c) 4.34 *eV* (d) 10.88 *eV*

79. *Mg* and *Li* are similar in their properties due to
(a) Same *e/m* ratio
(b) Same electron affinity
(c) Same group
(d) Same ionic potential

80. The formation of the oxide ion $O^{2-}_{(g)}$ requires first an exothermic and then an endothermic step as shown below
$\boldsymbol{O_{(g)} + e^- = O^-_{(g)} \Delta H^0 = -142\ kJmol^{-1}}$
$\boldsymbol{O^-_{(g)} + e^- = O^{2-}_{(g)} \Delta H^0 = 844\ kJmol^{-1}}$
This is because
(a) O^- ion will tend to resist the addition of another electron
(b) Oxygen has high electron affinity
(c) Oxygen is more electronegative
(d) O^- ion has comparatively larger size than oxygen atom

81. Which is correct about ionisation potential
(a) It is independent of atomic radii
(b) It increases with increase in atomic radii
(c) It remains constant with increase in atomic radii
(d) It decreases with increase in atomic radii

82. Flourine is the best oxidising agent because it has
(a) Highest electron affinity
(b) Highest E^0_{red}
(c) Highest E^0_{oxid}
(d) Lowest electron affinity

83. Which among the following elements have lowest value of IE_1
(a) *Pb* (b) *Sn*
(c) *Si* (d) *C*

84. In a given shell, the order of screening effect is
(a) $s > p > d > f$
(b) $f > d > p > s$
(c) $p < d < s < f$
(d) $d > f < s > p$
(e) $f > p > s > d$

85. Which of the following has the highest first ionisation energy
(a) *Li* (b) *Be*
(c) *B* (d) *C*

86. Which one of the following sets of ions represents the collection of isoelectronic species
(a) $K^+, Cl^-, Mg^{2+}, Sc^{3+}$
(b) $Na^+, Ca^{2+}, Sc^{3+}, F^-$
(c) $K^+, Ca^{2+}, Sc^{3+}, Cl^-$
(d) $Na^+, Mg^{2+}, Al^{3+}, Cl$

87. The correct order of reactivity of halogens is
(a) $F > Cl > Br > I$
(b) $F < Cl > Br < I$
(c) $F < Cl < Br < I$
(d) $F < Cl < Br > I$

88. The first ionisation potential is maximum for
(a) *B* (b) *N*
(c) *O* (d) *Be*

89. The correct order of ionisation energy for comparing carbon, nitrogen and oxygen atoms is
(a) $C > N > O$ (b) $C > N < O$
(c) $C < N > O$ (d) $C < N < O$