Date Planned : __ / __ / __	Daily Tutorial Sheet - 9	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 2	Exact Duration :_____

106. Consider the following ionisation reactions:

I.E. (kJ mol^{-1})		I.E. (kJ mol^{-1})	
$A_{(g)} \longrightarrow A^+_{(g)} + e^-$,	A_1	$B_{(g)} \longrightarrow B^+_{(g)} + e^-$,	B_1
$B^+_{(g)} \longrightarrow B^{2+}_{(g)} + e^-$,	B_2	$C_{(g)} \longrightarrow C^+_{(g)} + e^-$,	C_1
$C^+_{(g)} \longrightarrow C^{2+}_{(g)} + e^-$,	C_2	$C^{2+}_{(g)} \longrightarrow C^{3+}_{(g)} + e^-$,	C_3

If monovalent positive ion of A, divalent positive ion of B and trivalent positive ion of C have zero electron. Then incorrect order of corresponding I.E. is:

(A) $C_3 > B_2 > A_1$ **(B)** $B_1 > A_1 > C_1$

(C) $C_3 > C_2 > B_2$ **(D)** $B_2 > C_3 > A_1$

107. The incorrect statement is:

(A) The second ionisation energy of Se is greater than that of second ionisation energy of As

(B) The first ionisation energy of C^{2+} ion is greater than the first ionization energy of N^{2+} ion

(C) The third ionisation energy of F is greater than the third ionisation energy of O

(D) Halogens have highest I.E. in respective period

108. First three ionisation energies (in kJ/mol) of three representative elements given below:

Element	IE_1	IE_2	IE_3
P	495.8	4562	6910
Q	737.7	1451	7733
R	577.5	1817	2745

Then incorrect option is:

(A) Q : Alkaline earth metal **(B)** P: Alkali metals

(C) R: s-block element **(D)** They belong to same period

109. Which of the following statement is correct regarding following process?

(i) $Cl \xrightarrow{E.A.} Cl^-$ **(ii)** $Cl^- \xrightarrow{I.E.} Cl$

(iii) $Cl \xrightarrow{I.E.} Cl^+$ **(iv)** $Cl^+ \xrightarrow{I.E.} Cl^{2+}$

(A) |I.E. of process (ii)| = |E.A. of process (i)|

(B) |I.E. of process (iii)| = |I.E. of process (ii)|

(C) |I.E. of process (iv)| = |E.A. of process (i)|

(D) |I.E. of process (iv)| = |I.E. of process (iii)|

110. The correct order of increasing electron affinity of the following elements is:

(A) O < S < F < Cl **(B)** O < S < Cl < F

(C) S < O < F < Cl **(D)** S < O < Cl < F

111. The second electron gain enthalpies (in kJ mol^{-1}) of oxygen and sulphur respectively are:

(A) –780, +590 **(B)** –590, +780

(C) +590, +780 **(D)** +780, +590

112. Which of the following statements is correct?

(A) The magnitude of the second electron affinity of sulphur is greater than that of oxygen

(B) The magnitude of the second electron affinity of sulphur is less than of oxygen

(C) The first electron affinities of bromine and iodine are approximately the same

(D) The first electron affinity of fluorine is greater than that of chlorine

113. Which one of the following statements is incorrect?

(A) Greater is the nuclear charge, greater is magnitude of electron gain enthalpy

(B) Nitrogen has almost zero electron affinity

(C) Electron gain enthalpy decreases from fluorine to iodine in the group

(D) Chlorine has highest magnitude of electron gain enthalpy

114. The formation of the oxide ion $O^{2-}(g)$ requires first an exothermic and then an endothermic step as shown below:

$$O(g) + e^- \longrightarrow O^-(g); \qquad \Delta H = -142\,kJ\,mol^{-1}$$

$$O^-(g) + e \longrightarrow O^{2-}(g); \qquad \Delta H = 844\,kJ\,mol^{-1}$$

This is because:

(A) O^- ion has comparatively larger size than oxygen atom

(B) Oxygen has high electron affinity

(C) O^- ion will tend to resist the addition of another electron

(D) Oxygen is more electronegative

115. In which of the following processes energy is absorbed?

(A) $Cl + e^- \longrightarrow Cl^-$ **(B)** $O^- + e^- \longrightarrow O^{2-}$

(C) $O^{2-} - e^- \longrightarrow O^-$ **(D)** $Na^+ + e^- \longrightarrow Na$