116.(B) E.G.E of Cl is higher & also, EGE of C > N because N is half filled (Stable configuration) so will not accept e^- easily .

117.(B) I.E. of N > O because of it having half filled configuration

118.(B) In the isoelectronic species, all isoelectronic anions belong to the same period and cations to the next period.

119.(ABCD)

Due to inert pair effect, +2 oxidation state is more stable down the group.

So, $Ge^{4+} > Sn^{4+} > Pb^{4+}$ but $Ge^{2+} > Sn^{2+} < Pb^{2+}$

Also, Sn^{4+} is more stable than Sn^{2+}

But Pb^{2+} is more stable than Pb^{4+}

120.(ABC)

(A) Any orbital can accommodate maximum 2 electrons

(B) For same Z, successive I.E. increases due to increase in $\left(\frac{z}{e}\right)$

(C) $Co(27):[Ar]3d^7 4s^2$

$Co^{2+}:[Ar]3d^7 4s^0$ unpaired $e^- = 3$

$Co^{3+}:[Ar]3d^6 4s^0$, unpaired $e^- = 4$

(D) I.E. of Pt (6 period) > I.E. of Pd (5 period) due to poor shielding effect of 4f subshell in 6th period.

121.(C) More difference in E.N, more polar bond.

122.(A) The electronegativity difference between M_1 and O is 0.1, which indicates $M_1 - O$ bond will be covalent, since $O-H$ bond having more ionic character thus bond will break and H^+ ions will release and acidic solution is formed. Whereas difference between electronegativity of $M_2 - O$ bond is 2.3, thus, $M_2 - OH$ bond will break. Hence solution will be basic in nature.

123.(ABD)

(A) $M(g) \rightarrow M^+ \quad IE_1 = 100eV$

(B) $\left.\begin{matrix} M \rightarrow M^+ = 100\,eV \\ M \rightarrow M^{2+} = 250\,eV \end{matrix}\right\} M^+ \rightarrow M^{2+} = 150\,eV$

(C) Incorrect $\rightarrow IE_2 \rightarrow M(g) = 150\,eV$ not 250 eV

(D) Incorrect $\rightarrow$ Valid in case of M^+

124.(C) E.N. is the tendency to attract shared pair of e^- while EGE is the tendency of an isolated atom to attract one e^-.

125.(B) **(a)** Correct order $\rightarrow Ca^{2+} > K^+ > Cl^- > S^{2-}$ (Ionization energy)
For isoelectronic species (I.E. $\propto Z_{eff.}$)

(b) Correct order $\rightarrow C < N < F < O$ (2nd I.E.)

Second electron removal from O requires more energy as it acquires stable $2s^2 2p^3$ configuration after removal of one electron.

(c) Correct order $\rightarrow$ B > Tl > In > Ga > Al (Electronegativity)

In general EN increases in boron family from top to bottom due to increase in Z_{eff} on valence shell while boron has highest E.N. due to its very small size.

(d) Correct order $\rightarrow Na^{+} > Li^{+} > Mg^{2+} > Al^{3+} > Be^{2+}$ (Ionic radius)

Ionic radius depends on Z_{eff} and number of shells.