413. Which of the following order is wrong?
(A) $NH_3 < PH_3 < AsH_3$ ––acidic (B) $Li < Be < B < C$ –– $(IE)_1$
(C) $Al_2O_3 > MgO < Na_2O < K_2O$ –– Basic (D) $Li^+ < Na^+ < K^+ < Cs^+$ –– ionic radius

414. Amongst the following elements (whose electronic cnfigurations are given), the one having the highest ionization energy is :
(A) [Ne] $3s^2\ 3p^1$ (B) [Ne] $3s^2\ 3p^3$ (C) [Ne] $3s^2\ 3p^2$ (D) [Ar] $3d^{10}\ 4s^2\ 4p^3$

415. The outermost electronic configuration of the most electronegative element is
(A) $ns^2\ np^3$ (B) $ns^2\ np^4$ (C) $ns^2\ np^5$ (D) $ns^2\ np^6$

416. Which one of the following is the strongest base ?
(A) AsH_3 (B) PH_3 (C) NH_3 (D) SbH_3

417. Which one of the following fluoride of alkali metals metals has the highest lattice energy ?
(A) LiF (B) CsF (C) NaF (D) KF

418. The first ionization potential of Na, Mg, Al and Si are in the order
(A) Na > Mg > Al < Si (B) Na > Mg > Al > Si
(C) Na < Mg < Al < Si (D) Na < Mg > Al < Si

419. The electronegativity of the following elements increase in the order
(A) Si, P, C, N (B) N, Si, C, P
(C) P, Si, N, C (D) C, N, Si, P

420. A pair of substances which gives the same products on reaction with water is-
(A) Mg and MgO (B) Sr and SrO (C) Ca and CaH_2 (D) Be and BeO

421. $MgBr_2$ and MgI_2 are soluble in acetone because of
(A) Their ionic nature (B) Their coordinate nature
(C) Their metallic nature (D) Their covalent nature

422. Mercury is a liquid at 0°C because of-
(A) very high ionisation energy (B) weak metallic bonds
(C) high heat of hydration (D) high heat of sublimation

423. The formation of the oxide ion $O^{2-}(g)$ requires first an exothermic and the an endothermic step as shown here :
$O(g) + e^- \rightarrow O^-(g)$; $\Delta H^o = -142$ kJ mol^{-1}
$O^-(g) + e^- \rightarrow O^{2-}(g)$; $\Delta H^o = -844$ kJ mol^{-1}
This is because
(A) Oxygen is more electronegative
(B) Oxygen has high electron affinity
(C) O^- ion has comparatively larger size than oxygen atom
(D) O^- ion will tend to resist the addition of another electron

424. In which of the following arrangements, the order is according to the property indicated against it.

(I) $I < Br < F < Cl$ Increasing electron gain enthalpy
(II) $Li < Na < K < Rb$ increasing metallic radius
(III) $B < C < N < O$ Increasing first ionization energy
(IV) $Al^{3+} < Mg^{2+} < Na^{+} < F^{-}$ Increasing ionic size
(A) I, II and III (B) I and III only (C) I, II and IV (D) I and II only

425. Among Al_2O_3, SiO_2, P_2O_3 and SO_2 the correct order of acid strength is
(A) $Al_2O_3 < SiO_2 < P_2O_3 < SO_2$ (B) $SO_2 < P_2O_3 < SiO_2 < Al_2O_3$
(C) $SiO_2 < SO_2 < Al_2O_3 < P_2O_3$ (D) $Al_2O_3 < SiO_2 < SO_2 < P_2O_3$

426. The amount of energy released when 10^6 atoms of iodine in vapour state is converted into I^- ion is 4.8×10^{-13} J. What is the electron affinity of iodine in kJ/mole?
(A) 489 kJ (B) 289 kJ (C) 259 kJ (D) 389 kJ

427. The electron affinities of N, O, S and Cl are
(A) $O \approx Cl < N \approx S$ (B) $O < S < Cl < N$ (C) $N < O < S < Cl$ (D) $O < N < Cl < S$

428. An element (X) which occurs in the first short period has as outer electrnoc structure s^2p^1. What is the formula and acid - base character of its oxides ?
(A) XO_3, basic (B) X_2O_3 , acidic (C) X_2O_3, Basic (D) XO_2 acidic

429. In the descending order of a group in modern periodic table which of this following would be true?
(I) All the atoms have the same number of valence electrons
(II) Gram atomic volume increases
(III) Electronegativity decreases.
(IV) Metallic character decreases and the basic nature of their oxides decrease
Select the correct anser by using the following codes.
(A) I, II and III (B) II, III and IV (C) II and III (D) I and III

430. The electronic configuration of elements A, B and C are [He] $2s^1$, [Ne] $3s^1$ and [Ar] $4s^1$ respectively. Which one of the following order is correct for the first ionization potentials (in kJ mol^{-1}) of A, B and C ?
(A) A > B > C (B) C > B > A (C) B > C > A (D) C > A > B

431. During estimation of oxalic acid Vs $KMnO_4$, self indicator is-
(A) $KMnO_4$ (B) oxalic acid (C) K_2SO_4 (D) $MnSO_4$

432. Fluorine is a better oxidizing agent than iodine. The most probable reason is
(A) Fluorine is less stable than iodine (B) Flurine has smaller atomic radius than iodine
(C) Fluorine is more reactive than iodine.
(D) F^- ions have greater electron attracting power than I^- ions.

433. The electronic configurations of four elements are given here. Arrange these elements in the correct order of the magnitude (without sign) of their electron affinity.
(I) $2s^2\ 2p^5$ (II) $3s^2\ 3p^5$
(III) $2s^2\ 2p^4$ (IV) $3s^2\ 3p^4$
Select the correct answer using the codes given under :
(A) III < IV < II < I (B) III < IV < I < II (C) I < II < IV < III (D) II < I < IV < III

434. The aqueous solution of $CuCrO_4$ is green because it contains-
(A) green Cu^{2+} ions (B) green CrO_4^{2-} ions
(C) blue Cu^{2+} ions and green CrO_4^{2-} ions (D) blue Cu^{2+} ions and yellow CrO_4^{2-} ions

435. In which one of the following pairs, the radius of the second species is greater than that of the first?
(A) O^{2-}, N^{3-} (B) Na, Mg (C) Al, Be (D) Li^{+}, Be^{2+}

436. The electron affinity of chlorine is 3.7 eV. How much energy in kcal is released when 4g of chlorine is completely converted into Cl^{-} ion in a gaseos state. (Given : 1 eV = 23.06 kcal mol^{-1}).
(A) 9.6 kcal (B) 19.6 kcal (C) 4.8 kcal (D) 11.6 kcal

437. The first and second ionization energies of Mn are in the ratio 0.475 : 1. If the sum of the two energy values is 2226 kJ/mol, calculate the second ionization neergy (in kJ/mol).
(A) 1095 (B) 1960 (C) 1069 (D) 1509

438. The second ionization energies of the C, N, O and F atoms are such that
(A) O>N>F>C (B) F>O>N>C (C) C>O>N>F (D) O>F>N>C