Single Correct Answer Type:

1. Which of the following orders is incorrect with respect to the property indicated?

   (A) $NH_3 < PH_3 < AsH_3 \longrightarrow$ Acidic behavior

   (B) $Li < Be < B < C \longrightarrow$ First ionisation energy

   (C) $Al_2O_3 < MgO < Na_2O + K_2O \longrightarrow$ Basic character

   (D) $Li^+ < Na^+ < K^+ < Rb^+ \longrightarrow$ Size

2. The strength of an oxyacid $E(OH)_n$; where 'E' is the central atom, depends upon

   (A) Electro negativity of E, but not on its size

   (B) Atomic size of E, but not on its Electro negativity

   (C) Not on oxidation state of E in oxyacids

   (D) Atomic size, Electro negativity and oxidation state of 'E'

3. Molecular sizes of ICl and Br_2 are nearly same but Boiling point of ICl is higher than Br_2, because

   (A) $I-Cl$ bond is weaker than Br – Br bond

   (B) $I.E$ of Br is less than 'I' atom

   (C) ICl is polar where as Br_2 is non-polar

   (D) $I-Cl$ bond is stronger than Br – Br bond

4. Calculate the effective nuclear charge felt by a 3d-electron of chromium atom

   (A) 7.4 (B) 4.6 (C) 5.8 (D) 6.8

5. Calculate the electro negativity of Fluorine from the following data: $E_{H-H} = 104.2$ K.Cal/mol, $E_{F-F} = 36.6$ K.Cal.mol^{-1}, $E_{H-F} = 134.6$ K.Cal.mol^{-1}

   (A) 3.9 (B) 4 (C) 3.65 (D) 4.1

6. Which of the following indicating the set of atomic numbers of III_A group elements

   (A) 3, 11, 19, 37 (B) 5, 13, 21, 39 (C) 13, 31, 49, 81 (D) 13, 21, 39, 71

7. The element with the electronic configuration $[R_n]5f^7 6d^1 7s^2$ lies in the

   (A) s – block (II_A group) (B) d – block (III_B group)

   (C) f – block (III_B group) (D) d – block (7^{th} period)

8. i) $M_{(g)} \longrightarrow M^+_{(g)}$ ii) $M^-_{(g)} \longrightarrow M_{(g)}$ iii) $M^+_{(g)} \longrightarrow M^{2+}_{(g)}$ iv) $M^{2+}_{(g)} \longrightarrow M^{3+}_{(g)}$

   Minimum & maximum I.P would be of:

   (A) i & iii (B) i & iv (C) ii & iv (D) ii & iii

9. Which of the following orders for electrons affinity is/are correct?

   i) P > N < As ii) Cl > F iii) Br < Cl

   iv) C > N v) N < O vi) O >s

   (A) i, ii, iii, iv, v (B) i, ii, iii, v (C) ii, iii, iv, vi (D) i, iii, v, vi

10. Which of the following orders of atomic/ionic radius is not correct?

    (A) $P^{+3} > P^{+5}$ (B) $I^+ < I < I^-$ (C) $F^- > Na^+ < Mg^{2+}$ (D) $B < Be < Li$

11. Addition of electron would be easier in

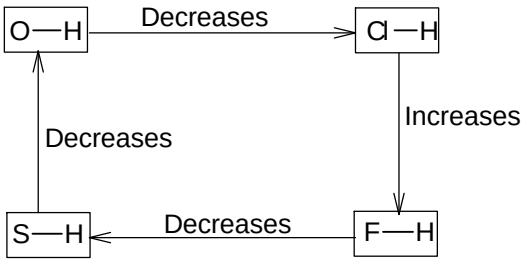
(A) O (B) O^+ (C) O^- (D) O^{2+}

12. Which of the following electronic configuration represents a sudden large jump between values of 2^{nd} & 3^{rd} Ionisation energies of an element.

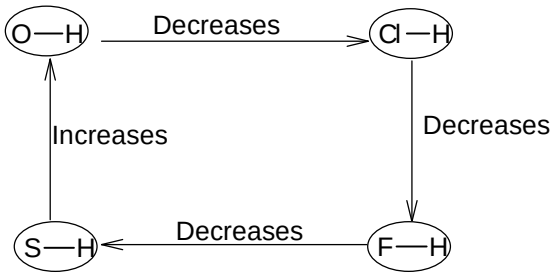
(A) $1s^2\ 2s^2\ 2p^3$ (B) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^1$ (C) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$ (D) $1s^2\ 2s^2\ 2p^6\ 3s^2$

13. Which of the following diagrams shows correct change in polarity of bond?

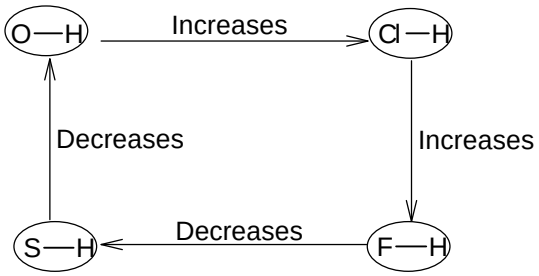
(A)



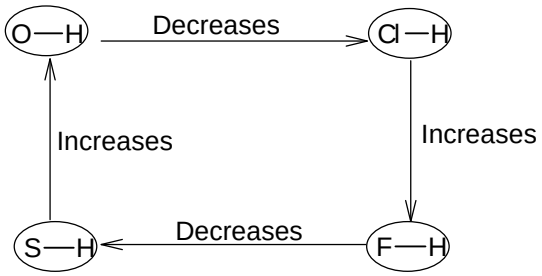
(B)



(C)



(D)



14. The decreasing order of I.E. of the following elements is

(A) Ne > Cl > P > S > Al > Mg (B) Ne > Cl > P > S > Mg > Al

(C) Ne > Cl > S > P > Mg > Al (D) Ne > Cl > S > P > Al > Mg

15. Incorrect order of Ionisation energy is

(A) $Sc^{+3} > Sc^{+2} > Sc^{+}$ (B) $Sc^{+3} > Ti^{+4} > V^{+5}$ (C) Sc > Ca > K (D) Sc > Y > La

16. Order of electron affinity values of elements or ions incorrectly shown in

(A) $O > O^-$ (B) $S > O^-$ (C) $O > S^-$ (D) $N^- > S$

17. In which of the following pairs atomic size of the 2^{nd} element is higher than size of 1^{st} element

(A) Sc, Zn (B) La, Hf (C) Cd, Zn (D) Y, La

18. Which of the following sequence is correct for decreasing order of ionic radius?

(A) $I^-, Se^{-2}, O^{2-}, Br^-, F^-$, (B) $I^-, Se^{2-}, Br^-, O^{2-}, F^-$

(C) $I^-, Br^-, Se^{2-}, O^{2-}, F^-$ (D) $Se^{2-}, I^-, Br^-, F^-, O^{2-}$

19. A_2 and B_2 are two diatomic molecules with bond energies of A – A and B – B bonds as 9 K.Cal/mol & 4 K.Cal/mol respectively. If the Bond energy of A – B formed from A_2 & B_2 is 7 K.Cal per mole. Then the resonance energy of A – B is _____

(A) 1 K.Cal/mole (B) 2 K.Cal/mole (C) 3 K.Cal/mole (D) 4 K.Cal/mole

20. The correct values of ionisation enthalpies (in K.J/mol) of Si, P, Cl and S respectively are:

(A) 786, 1012, 999, 1256 (B) 786, 1012, 1256, 999

(C) 1012, 786, 999, 1256 (D) 786, 999, 1012, 1256

Numerical Based:

21. The number of elements which are more electro positive than Fe from the following Sc, Rb, Br, Te, F & Ca _____

22. The no. of paramagnetic species in the following Na^+, Cl^-, Sn^{2+}, Co^{3+}, Cd, Zn^{2+}, Cr^{3+} _____

23. The amount of energy required to convert 7.974 g of 'Cs' atoms to form Cs^+ ions is $5.61\,x$ K.Joules, then what is the value of 'x'.
(Note: IE_1 of $C_s = 374$ K.J/mol & atomic mass of $C_s = 132.9$ amu)

24. The no. of Amphoteric oxides from the following _____
Co, Al_2O_3, SnO, PbO, P_2O_5, ZnO, BeO, B_2O_3

25. How many of the following represent atomic numbers of representative elements:
56, 69, 81, 37, 54, 34, 23, 88

KEY

1.	B	2.	D	3.	C	4.	B	5.	C
6.	C	7.	C	8.	C	9.	A	10.	C
11.	D	12.	D	13.	D	14.	B	15.	C
16.	D	17.	D	18.	B	19.	A	20.	B
21.	3	22.	2	23.	4	24	5	25.	5