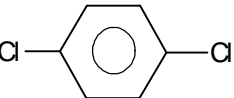
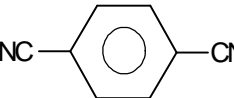
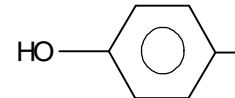
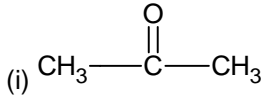


Single Correct Answer Type:

- Among the following the maximum covalent character is shown by the compound.
(A) MgCl_2 (B) FeCl_2 (C) AlCl_3 (D) SnCl_2
- Polarisation power of a cation increases when
(A) Charge on the cation increases (B) Size of the cation increases
(C) Charge on the cation decreases (D) Has no relation to its size or charge
- CO_2 is not isostructural with
(A) HgCl_2 (B) SnCl_2 (C) C_2H_2 (D) ZnCl_2
- The hybridisation of atomic orbitals of Nitrogen in NO_2^+ , NO_2^- and NH_4^+ are
(A) SP^2, SP^3 and SP^2 (B) SP, SP^2 and SP^3 (C) SP^2, SP and SP^3 (D) SP^2, SP^3 and SP
- Molecules having maximum numbers of dative bonds is
(A) H_2O_2 (B) NH_4^+ (C) Al_2Cl_6 (D) $\text{B}_3\text{N}_3\text{H}_6$
- Which of the following cannot be formed?
(A) He^{2+} (B) He^+ (C) He (D) He_2
- The correct statement for the molecule CsI_3 is
(A) It contains Cs^+ and I_3^- ions (B) It contains Cs^{+3} and I^- ions
(C) It contains Cs^+ , I^- and I_2 molecule (D) It is a covalent molecule
- For which of the following molecules dipole moment is zero at all conditions
(i)  (ii)  (iii) 
(A) (i) and (ii) only (B) (i), (ii) and (iii) only (C) (i) and (iii) only (D) (ii) and (iii) only
- Arrange the solubility of NaCl in decreasing order in the following solvents
(i)  (ii) $\text{CH}_3\text{CH}_2\text{OH}$ (iii) H_2O
(A) $i > ii > iii$ (B) $iii > ii > i$ (C) $ii > i > iii$ (D) $i = ii = iii$
- Which of the following overlaps is incorrect?
(a) $2P_y + 2P_y = \pi 2P_y$ (b) $2P_z + 2P_z = \sigma 2P_z$
(c) $2P_x + 2P_x = \pi 2P_x$ (d) $1S + 2P_y = \pi(1S - 2P_y)$
(A) a and b (B) b and d (C) Only d (D) None
- Energy is released in the process of
(A) $\text{Na}_{(g)} \longrightarrow \text{Na}^+_{(g)} + e^-$ (B) $\text{O}^-_{(g)} + e^- \longrightarrow \text{O}^{2-}_{(g)}$
(C) $\text{O}_{(g)} + e^- \longrightarrow \text{O}^-_{(g)}$ (D) $\text{N}^{2-}_{(g)} + e^- \longrightarrow \text{N}^{3-}_{(g)}$
- Which of the following is incorrect?
(A) $\text{B} < \text{Al} < \text{Ga} < \text{In} < \text{Tl}$ (Atomic radius) (B) $\text{B} < \text{Ga} < \text{Al} < \text{In} < \text{Tl}$ (Atomic radius)
(C) $\text{B} > \text{Tl} > \text{Ga} > \text{Al} > \text{In}$ (I.E) (D) $\text{C} > \text{Si} > \text{Ge} > \text{Pb} > \text{Sn}$ (I.E)

13. Which of the following has highest second ionisation potential
 (A) Nitrogen (B) Carbon (C) Oxygen (D) Flourine
14. Which of the following will have almost positive EA_1
 (A) Chlorine (B) Oxygen (C) Magnesium (D) Oxygen
15. Successive ionisation potentials of an element M are 8.3, 25.1, 37.9, 259.3 and 340.1 eV. The formula of its bromide is
 (A) MBr_2 (B) MBr_3 (C) MBr_4 (D) MBr_5
16. An element "X" has IP = 1681 KJ/mole and EA = - 333 KJ/mole, then its electronegativity is _____
 (A) $1681+333/544$ (B) $1681-333/544$ (C) $1681+333/2$ (D) $\frac{0.208\sqrt{1681+333}}{544}$
17. In which of the following period a maximum number 32 elements are present
 (A) 4th (B) 6th (C) 3rd (D) 7th
18. Valency and oxidation number of nitrogen in N_2O_5
 (A) 2, 5 (B) 4, 5 (C) 3, 4 (D) 5, 4
19. The order in which the following oxides are arranged according to decreasing basic nature is _____
 (A) CuO, Na_2O, MgO, Al_2O_3 (B) Al_2O_3, MgO, CuO, Na_2O
 (C) MgO, Al_2O_3, CuO, Na_2O (D) Na_2O, MgO, Al_2O_3, CuO
20. Number hybrid orbitals in NH_3 and PH_3 are
 (A) 4, 4 (B) 4, 3 (C) 4, 0 (D) 3, 0

Numerical Based:

21. I. $I.Cl \longrightarrow Cl^+ + e^-$: I.E = 1250 KJ/mol
 II. $Cl + e^- \longrightarrow Cl^-$: EA = 350 KJ/mol
 The number of 'Cl' atoms ionised by the energy released from the reaction-II is $x \times 10^{23}$ atoms. Then the value of x = _____
22. For the gaseous reaction
 $K + F \longrightarrow K^+ + F^-$, ΔH was calculated to be 19 Kcal/mol under the conditions where the cations and anions were prevented by electrostatic separation from combining with each other. The ionisation potential of 'K' is 403 eV/atom. Then E.A. of F = _____ eV/atom.
23. Electron affinity of Iodine is x KCal/mol with the given data below (all values are in KCal/mol)
 $(\Delta H_{for})_{NaI} = -68.8$ $\frac{1}{2}(\Delta H_{sub} + \Delta H_{diss})_{I_2} = 25.5$
 $(\Delta H_{sub})_{Na} = 25.9$ $(IP)_{Na} = 118.4$
 $(U)_{NaI} = 165.4$ Value of x is _____
 (Lattice energy = U)
24. Out of I_3^- , ICl_2^+ , $BeCl_2$, XeF_2 , XeF_6 , BrF_5 , $HC \equiv CH$, how many will have linear shape?
25. How many hydrogen bonds a water molecule can form?

KEY

1.	C	2.	A	3.	B	4.	B	5.	D
6.	D	7.	A	8.	A	9.	B	10.	C
11.	C	12.	A	13.	C	14.	C	15.	B
16.	A	17.	B	18.	B	19.	D	20.	C
21.	1.686	22.	3.48	23.	73.2	24.	5	25.	4