

CHEMISTRY

Chemical Bonding

41. In PO_4^{3-} , the formal charge on each oxygen atom and the P – O bond order respectively are

- (1) $-0.75, 0.6$ (2) $-0.75, 1.0$
 (3) $-0.75, 1.25$ (4) $-3, 1.25$

42. KF combines with HF to form KHF_2 . The compound contains the species

- (1) K^+, F^- and H^+
 (2) $\text{K}^+, \text{F}^{-1}$ and HF
 (3) K^+ and $[\text{HF}_2]^-$
 (4) $[\text{KHF}]^+$ and F_2

43. An ether is more volatile than an alcohol having the same molecular formula. This is due to

- (1) dipolar character of ethers
 (2) alcohols having resonance structures
 (3) inter-molecular hydrogen bonding in ethers
 (4) inter-molecular hydrogen bonding in alcohols

44. In which of the following ionisation processes, the bond order has increased and the magnetic behaviour has changed?

- (1) $\text{N}_2 \rightarrow \text{N}_2^+$ (2) $\text{C}_2 \rightarrow \text{C}_2^+$
 (3) $\text{NO} \rightarrow \text{NO}^+$ (4) $\text{O}_2 \rightarrow \text{O}_2^+$

45. The maximum number of 90° angles between bond pair-bond pair of electrons is observed in

- (1) dsp^2 hybridised
 (2) sp^3d hybridised
 (3) dsp^3 hybridised
 (4) sp^3d^2 hybridised

46. Two ice cubes are pressed over each other until they unit to form one block. Which one of the following forces dominate for holding them together?

- (1) Dipole-dipole interaction
 (2) Van der Waals' forces
 (3) Hydrogen bond formation
 (4) Covalent attraction

47. In $\text{XeF}_2, \text{XeF}_4$ and XeF_6 , the number of lone pairs on Xe are respectively

- (1) 2, 3, 1 (2) 1, 2, 3
 (3) 4, 1, 2 (4) 3, 2, 1

48. The hybridization of atomic orbitals of nitrogen in $\text{NO}_2^+, \text{NO}_2^-$ and NH_4^+ are

- (1) sp^2, sp^3 and sp^2 respectively
 (2) sp, sp^2 and sp^3 respectively
 (3) sp^2, sp and sp^3 respectively
 (4) sp^2, sp^3 and sp respectively

49. Match column - I with column - II and choose the correct option from the given codes

Column- I (Molecule)		Column-II (Shape of molecule)	
(A)	NH_3	(p)	Bent
(B)	SO_2	(q)	Trigonal pyramidal
(C)	SF_4	(r)	T-shape
(D)	ClF_3	(s)	See-saw

- (1) A-(q); B-(p); C-(r); D-(s)
 (2) A-(q); B-(p); C-(s); D-(r)
 (3) A-(q); B-(s); C-(r); D-(p)
 (4) A-(q); B-(r); C-(q); D-(s)

50. Which of the following statements is/are not correct for combination of atomic orbitals to form molecular orbitals?

- (i) The combining atomic orbitals must have the same or nearly the same energy.
 (ii) Greater the extent of overlap, the greater will be the electron density between the nuclei of a molecular orbital.

(iii) $2p_z$ orbital of one atom can combine with either of $2p_x$, $2p_y$ or $2p_z$ orbital of other atom as these orbitals have same energy.

(1) (i) and (ii)

(2) (iii) only

(3) (i) only

(4) (ii) and (iii)



**PARISHRAMA
NEET ACADEMY**