Date Planned : __ / __ / __	Daily Tutorial Sheet - 3	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 1	Exact Duration :_____

31. The N_2H_4 molecule contains :

(A) 4 lone pairs of electrons **(B)** 3 lone pairs of electrons

(C) 2 lone pairs of electrons **(D)** No lone pair of electrons

32. Which statement is not correct about NO_2?

(A) It is paramagnetic **(B)** It forms dimer and paramanetism is lost

(C) It has one coordinate bond **(D)** It has nitrogen oxygen triple bond

33. The hybrid orbital of the central atom in AlF_4^- is:

(A) sp **(B)** sp^2 **(C)** sp^3 **(D)** dsp^2

34. Select the correct statement.

(A) BF_3 and NH_3 have same dipole moment

(B) Dipole moment of NH_3 is smaller than that of BF_3

(C) BF_3 molecule has a planar structure, while the NH_3 molecule is tetrahedral

(D) The nitrogen atom has unshared pair of electrons, while the boron atom has a free (vacant) valence orbital.

35. In which of the following sets, all the three compounds have bonds that are mainly ionic?

(A) NaCl, NCl_3, CCl_4 **(B)** CsBr, $BaBr_2$, SrO

(C) CsF, BF_3, NH_3 **(D)** Al_2O_3, CaO, SO_2

36. Which of the following is most polar bond?

(A) Cl – Cl **(B)** N – F **(C)** C – F **(D)** O – F

37. C – H bond distance is the longest in :

(A) C_2H_2 **(B)** C_2H_4 **(C)** C_2H_6 **(D)** $C_2H_2Br_2$

38. Which of the following molecules does not have a dipole moment?

(A) IBr **(B)** $CHCl_3$ **(C)** CH_2Cl_2 **(D)** BF_3

39. Correct order of bond length is:

(A) $CO_3^{2-} > CO_2 > CO$ **(B)** $CO_2 > CO > CO_3^{2-}$

(C) $CO > CO_2 > CO_3^{2-}$ **(D)** None of these

40. The hybridization of the central atom in ClO_2F_2 is :

(A) sp^3d^2 **(B)** sp^3 **(C)** sp^3d **(D)** sp^3d^3

41. Which of the following molecules has the maximum value of bond energy ?

(A) $F_2(g)$ **(B)** $N_2(g)$ **(C)** CO(g) **(D)** HF(g)

42. The species which has a linear structure is :

(A) NO_2 **(B)** NO_2^+ **(C)** NO_2^- **(D)** $PbCl_2$

43. The hybridization and geometry of BrF_3 molecules are :

(A) sp^3d and T – shaped **(B)** sp^3d^2 and tetrahedral

(C) sp^3d and bent **(D)** None of these

44. The shape of NH_3 is very similar to that of :

(A) BH_3 **(B)** CH_3^- **(C)** CH_3^+ **(D)** SO_4^{2-}

45. In $\overset{1}{C}H_2 = \overset{2}{C}H - \overset{3}{C}H_2 - \overset{4}{C} \equiv \overset{5}{C}H$, the $C_2 - C_3$ bond involves the hybridization of the type :

(A) $sp - sp^2$ **(B)** $sp^3 - sp^3$

(C) $sp - sp^3$ **(D)** $sp^2 - sp^3$