

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

31.	The	NT TT	malaaula	contains	
31 .	$_{\rm IIIe}$	N_0H_A	molecule	contains	

(A)	4 lone pairs of electrons
(A)	4 ione pairs of electrons

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

(B)
$$\operatorname{sp}^2$$

(C)
$$sp^3$$

(**D**)
$$dsp^2$$

34. Select the correct statement.

(A)
$$\rm BF_3$$
 and $\rm NH_3$ have same dipole moment

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

(C)
$${
m BF}_3$$
 molecule has a planar structure, while the ${
m NH}_3$ 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

(C)
$$CsF, BF_3, NH_3$$

(D)
$$Al_2O_3$$
, CaO, SO_2

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?

(B)

(A)

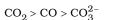
 $CO_3^{2-} > CO_2 > CO$

(C)
$$CH_2Cl_2$$

(B)

(D)
$$BF_3$$

39. Correct order of bond length is:



(C)
$$CO > CO_2 > CO_3^{2-}$$

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

(A)
$$\mathrm{sp}^3\mathrm{d}^2$$

(B)
$$\operatorname{sp}^3$$

(C)
$$sp^3d$$

(**D**)
$$\operatorname{sp}^3 \operatorname{d}^3$$

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

$$(A) F2(g)$$

$$N_2(g)$$

(D)
$$HF(g)$$

42. The species which has a linear structure is :

(B)
$$NO_2^+$$

(C)
$$NO_2^-$$

(D)
$$PbCl_2$$

lacksquare



- **43.** The hybridization and geometry of BrF₃ 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)** BH₃
- **(B)** CH_3^-
- (C) CH_3^+
- **(D)** SO_4^{2-}
- **45.** In $CH_2 = CH CH_2 C \equiv CH$, the $C_2 C_3$ bond involves the hybridization of the type :
 - (A) $\operatorname{sp} \operatorname{sp}^2$

(B) $\operatorname{sp}^3 - \operatorname{sp}^3$

(C) $\operatorname{sp} - \operatorname{sp}^3$

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