

(c) 180° (d) 109.5°

49. The species in which the central atom uses sp^2 hybrid orbitals in its bonding is

(a) PH_3 (b) NH_3
(c) H_3C^+ (d) SbH_3

50. Carbon atoms in diamond are bonded to each other in a configuration

(a) Tetrahedral (b) Planar
(c) Linear (d) Octahedral

51. Which of the following molecules can central atom said to adopt sp^2 hybridization

(a) BeF_2 (b) BCl_3
(c) C_2H_2 (d) NH_3

52. In $[Cu(NH_3)_4]SO_4$, Cu has following hybridization

(a) dsp^2 (b) sp^3
(c) sp^2 (d) $sp^3 d^2$

53. The hybridization of carbon atoms in $C - C$ single bond of $HC \equiv C - CH = CH_2$ is

(a) $sp^3 - sp^3$ (b) $sp^2 - sp^3$
(c) $sp - sp^2$ (d) $sp^3 - sp$

54. The compound in which C^* uses sp^3 hybrids for bond formation is

(a) $H \rightleftharpoons C^+ \rightleftharpoons OOH$
(b) $(NH_2)_2 \rightleftharpoons C^+ \rightleftharpoons O$
(c) $(NH_3)_3 \rightleftharpoons C^+ \rightleftharpoons OHgCl_2$
(d) $CH_3 \rightleftharpoons C^+ \rightleftharpoons HO$

55. In diborane, the $H - B - H$ bond angle is 120° . The hybridization of boron is likely to be

(a) sp (b) sp^2
(c) sp^3 (d) dsp^2

56. The number of shared pairs of electrons in propane is

(a) 2 (b) 4
(c) 6 (d) 10

57. s-character in sp hybridised orbitals are

(a) $\frac{1}{3}$ (b) $\frac{1}{2}$
(c) $\frac{1}{4}$ (d) $\frac{2}{3}$



58. The two types of bonds present in B_2H_6 are covalent and

- (a) Three centre bond
- (b) Hydrogen bond
- (c) Two centre bond
- (d) None of the above

[?]

59. In the compound CH_3OCl , which type of orbitals have been used by the circled carbon in bond formation

- (a) sp^3
- (b) sp^2
- (c) sp
- (d) p

60. The correct order of the $O - O$ bond length in O_2 , H_2O_2 and O_3 is

- (a) $O_2 > O_3 > H_2O_2$
- (b) $O_3 > H_2O_2 > O_2$
- (c) $H_2O_2 > O_3 > O_2$
- (d) $O_2 > H_2O_2 > O_3$

