

CHEMISTRY

91. Hybridization shown by carbon and oxygen of $-OH$ group in phenol are respectively

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

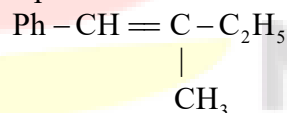
92. Based on VSEPR theory, the number of $90^\circ F-Br-F$ angles in BrF_5 is

- (1) 0 (2) 1
 (3) 2 (4) 3

93. Which one of the following conversions involve change in both hybridization and shape?

- (1) $CH_4 \rightarrow C_2H_6$
 (2) $NH_3 \rightarrow NH_4^+$
 (3) $BF_3 \rightarrow BF_4^-$
 (4) $H_2O \rightarrow H_3O^+$

94. How many σ -bond π -bonds are present in given compound?



- (1) 19σ and 2π -bonds
 (2) 22σ and 1π -bonds
 (3) 25σ and 4π -bonds
 (4) 26σ and 3π -bonds

95. Which of the following has sp^2 hybridization?

- (1) C_2H_6 (2) C_2H_4
 (3) $BeCl_2$ (4) C_2H_2

96. The AsF_5 molecule is trigonal bipyramidal. The hybrid orbital used by the As atoms for bonding are

- (1) $d_{x^2-y^2}, d_{z^2}, s, p_x, p_y$
 (2) d_{xy}, s, p_x, p_z
 (3) $s, p_x, p_y, p_z, d_{z^2}$
 (4) $d_{x^2-y^2}, s, p_x, p_y$

97. A σ -bonds molecule MX_3 is T-shaped. The number non-bonding pairs of electron is

- (1) 0
 (2) 2
 (3) 1
 (4) can be predicted only if atomic number of M is known

98. The hybrid state of S in SO_3 is similar to that of

- (1) C in C_2H_2 (2) C in C_2H_4
 (3) C in CH_4 (4) C in CO_2

99. SF_2, SF_4 and SF_6 have the hybridizations at sulphur atom respectively as

- (1) sp^2, sp^3, sp^2d^2
 (2) sp^3, sp^3, sp^3d^2
 (3) sp^3, sp^3d, sp^3d^2
 (4) sp^3, sp^2d^2, d^2sp^3

100. In pyrophosphoric acid, $H_4P_2O_7$ number of σ and $d\pi$ - π bonds are respectively

- (1) 8 and 2 (2) 6 and 2
 (3) 12 and zero (4) 12 and 2