

CHEMISTRY

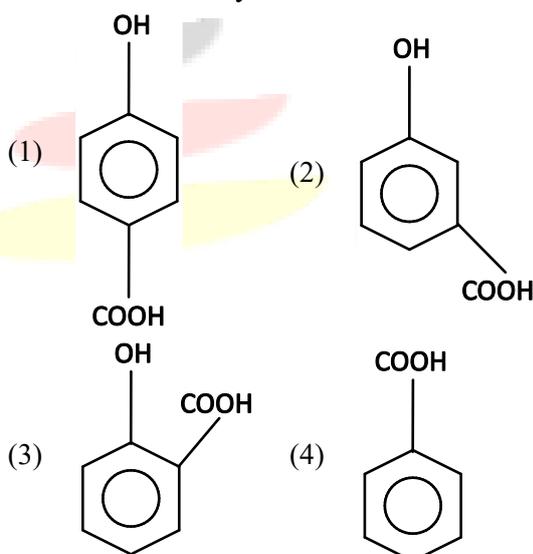
111. Which one of the following linear structure?

- | | |
|--------------------|------------------|
| (I) I_3^- | (II) NO_2^- |
| (III) CO_3^{2-} | (IV) SO_2 |
| (V) N_3^- | |
| (1) I, II and III | (2) I and V |
| (3) II, III and IV | (4) All of these |

112. Correct order of bond angles in NH_3 , PCl_3 and BCl_3 is

- (1) $PCl_3 > NH_3 > BCl_3$
 (2) $NH_3 > BCl_3 > PCl_3$
 (3) $NH_3 > PCl_3 > BCl_3$
 (4) $BCl_3 > NH_3 > PCl_3$

113. Which of the following compound has maximum volatility?



114. The low density of ice compared to water is due to

- (1) induced dipole-induced dipole interactions
 (2) dipole-induced dipole interactions
 (3) hydrogen bonding interactions
 (4) dipole-dipole interactions

115. Which of the following is not correct with respect to bond length of the species?

- | | |
|----------------------|-------------------|
| (1) $C_2 > C_2^{2-}$ | (2) $B_2^+ > B_2$ |
| (3) $Li_2^+ > Li_2$ | (4) $N_2 > N_2^+$ |

116. When O_2 is converted into O_2^+

- (1) both paramagnetic character and bond order increase
 (2) bond order decreases
 (3) paramagnetic character increases
 (4) paramagnetic character decreases and the bond order increases

117. Which one of the following is paramagnetic?

- | | |
|-----------|-----------|
| (1) N_2 | (2) NO |
| (3) CO | (4) O_3 |

118. The bond order in NO is 2.5 while that in NO^+ is 3. Which of the following statements is true for these two species?

- (1) bond length in NO^+ is greater than in NO
 (2) bond length in NO is greater than in NO^+
 (3) bond length in NO^+ is equal to bond length in NO
 (4) bond length is unpredictable

119. In a homonuclear molecule which of the following set of orbitals is degenerate?

- (1) $\sigma 2s$ and $\sigma 1s$
 (2) $\pi 2p_x$ and $\pi 2p_y$
 (3) $\pi 2p_x$ and $\sigma 2p_z$
 (4) $\sigma 2p_z$ and $\pi 2p_x$

120. Which species has the highest bond order?

- (1) O_2
 (2) O_2^{2-}
 (3) N_2
 (4) Both O_2 and O_2^{2-}