

## CHEMISTRY

### Chemical Bonding

71. Bond order of 1.5 is shown by  
 (1)  $O_2^+$  (2)  $O_2^-$   
 (3)  $O_2^{2-}$  (4)  $O_2$
72. Which one of the following properties is not shown by NO?  
 (1) It is diamagnetic in gaseous state  
 (2) It is neutral oxide  
 (3) It combines with oxygen to form nitrogen dioxide  
 (4) It's bond order is 2.5
73. The charge/size ratio of a cation determines its polarizing power. Which one of the following sequences represents the increasing order of the polarizing power of the cationic species,  $K^+$ ,  $Ca^{2+}$ ,  $Mg^{2+}$ ,  $Be^{2+}$ ?  
 (1)  $Ca^{2+} < Mg^{2+} < Be^{2+} < K^+$   
 (2)  $Mg^{2+} < Be^{2+} < K^+ < Ca^{2+}$   
 (3)  $Be^{2+} < K^+ < Ca^{2+} < Mg^{2+}$   
 (4)  $K^+ < Ca^{2+} < Mg^{2+} < Be^{2+}$
74. In which of the following pairs of molecules/ions, both the species are not likely to exist?  
 (1)  $H_2^+$ ,  $He_2^{2-}$  (2)  $H_2^-$ ,  $He_2^{2-}$   
 (3)  $H_2^{2+}$ ,  $He_2$  (4)  $H_2^-$ ,  $He_2^{2+}$
75. Which follows octet rule?  
 (1)  $SF_6$  (2)  $PCl_5$   
 (3)  $NH_3$  (4)  $IF_7$
76. The crystal lattice of an electrovalent compound is composed of  
 (1) atoms  
 (2) molecules  
 (3) oppositely charged ions  
 (4) both molecules and ions
77. Among  $LiCl$ ,  $BeCl_2$ ,  $BCl_3$  and  $CCl_4$ , the covalent bond character follows the order  
 (1)  $LiCl < BeCl_2 > BCl_3 > CCl_4$   
 (2)  $LiCl > BeCl_2 < BCl_3 < CCl_4$   
 (3)  $LiCl < BeCl_2 < BCl_3 < CCl_4$   
 (4)  $LiCl > BeCl_2 > BCl_3 > CCl_4$
78. Which of the following bonds is most polar?  
 (1) O – H (2) P – H  
 (3) C – F (4) S – Cl
79. Polarisability of halide ions increases in the order  
 (1)  $F^-$ ,  $I^-$ ,  $Br^-$ ,  $Cl^-$   
 (2)  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $F^-$   
 (3)  $I^-$ ,  $Br^-$ ,  $Cl^-$ ,  $F^-$   
 (4)  $F^-$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$
80. Ionic bonds are usually formed by combination of elements with  
 (1) high ionisation potential and low electron affinity  
 (2) low ionisation potential and high electron affinity  
 (3) high ionisation potential and high electron affinity  
 (4) low ionisation potential and low electron affinity