

Self-Assessment

Chapter 4: Chemical bonding and Molecular structure

1. The bond angle around atom which uses sp^2 hybridization is ————
 - (a) 120°
 - (b) 180°
 - (c) 107°
 - (d) $109^\circ.28'$
2. Which of the following substances has a dipole moment more than zero?
 - (a) Water
 - (b) Methane
 - (c) Carbon dioxide
 - (d) Nitrogen
3. The increasing order of bond order in the oxygen species is ————.
 - (a) $O_2^+ < O_2^- < O_2^{2+}$
 - (b) $O_2^- < O_2^+ < O_2^{2+}$
 - (c) $O_2^{2+} < O_2^+ < O_2^-$
 - (d) $O_2^{2+} < O_2^- < O_2^+$
4. Which of the following molecules have trigonal planar geometry?
 - (a) BF_3
 - (b) NH_3
 - (c) PCl_3
 - (d) IF_3
5. In which of the following pairs, the two molecules have identical bond orders
 - (a) N_2 , O_2^{2+}
 - (b) N_2 , O_2^-
 - (c) N_2^- , O_2
 - (d) O_2^{2-} , N_2

6. The compound containing both covalent and Ionic bond is

(a) NH_4Cl

(b) CaO

(c) MgCl_2

(d) N_2

7. Calculate the formal charge of C in CH_4 .

a) 4

b) 1

c) -4

d) 0

8. What is the bond order of CO?

a) 3

b) 2

c) 1

d) 4

9. Which of the following is correct regarding repulsive interaction?

a) Lone pair-Lone pair is greater than Lone pair-Bond pair is greater than Bond pair-Bond pair

b) Lone pair-Lone pair is less than Lone pair-Bond pair is less than Bond pair-Bond pair

c) Lone pair-Bond pair is greater than Lone pair-Lone pair is greater than Bond pair-Bond pair

d) Lone pair-Lone pair is greater than Lone pair-Bond pair is less than Bond pair-Bond pair

10. How many orbitals are included in sp^3d hybridization?

a) 5

b) 4

c) 3

d) 6

Objective type Answers

1.a 2.a 3.b 4.a 5.a 6.a 7.d 8.a 9.a 10.a