Nishant Jindal

DPP-02

1. If y-axis is the approaching axis between two atoms, then which of the set of orbitals can not form the π bond between two atoms in general.

(A) $p_z - p_z$ (B) $p_x - p_x$ (C) $p_x - p_y$ (D) None of these

2. The maximum number of bond and π-bond can be formed between two atoms are respectively

(A) 4,3 (B) 3, 2 (C) 2,3 (D) 3,1

3. Which of the following set of overlap can not provide π-bond formation.

(A) 3 d and 2p (B) 2p and 3p (C) 2p and 2p (D) 3p and 1 s

4. The ratio of number of σ-bond to π-bond in N_2 and CO molecules are

(A) 2.0,2.0 (B) $2, \frac{1}{2}$ (C) $\frac{1}{2}, \frac{1}{2}$ (D) $\frac{1}{2}, 2$

More than one may be correct :

5. If the molecular axis is Z then which of the following overlapping is not possible.

(A) $p_z + p_z = \sigma$ bond (B) $p_x + p_y = \pi$ bond

(C) $p_x + p_x = \pi$ bond (D) $p_y + p_y = \pi$ bond

Paragraph for question nos. 6 to 8

Different types of bonds are formed in the chemical compounds. These bond have different strength and bond energies associated with them. These bonds are formed with atoms in different environments

6. Which of the following bond has highest bond energy?

(A) σ-bond (B) π-bond (C) Hydrogen bond (D) None of these

7. Which of the following overlapping is involved in formation of only σ-bond

(A) s-p overlapping (B) p-d overlapping

(C) d-d overlapping (D) p-p overlapping

8. Which of the following hydrides is thermally least stable?

(A) H_2O (B) H_2Te (C) H_2S (D) H_2Se

9. Match the column :

Column I	**Column II**
(A) $NH_3 \cdot BF_3$	(P) Ionic bond
(B) CO	(Q) Covalent bond
(C) NH_4Cl	(R) Co-ordinate bond
(D) KI_3	s(S) 3 lone pair on any one atom

10. If molecular axis is X then how many of the following overlapping will form π bond.

$p_z + p_z, p_x + p_x, p_x + p_y, s + p_z, p_y + p_y$

ANSWER KEY

DPP-2

1. C **2.** B **3.** D **4.** C **5.** B **6.** A **7.** A

8. B **9.** (A) → Q, R, S; (B) → Q, R; (C) → P, Q, R; (D) → P, Q, R, S **10.** 2