Arjuna 2.0 JEE 2026

T.F.T. - 07 | **Chemical Bonding** | **By ATS Sir**

1. The pair of compounds having similar geometry.
(A) BF_3, NF_3 (B) BeF_2, H_2O
(C) BCl_3, PCl_3 (D) BF_3, CH_3^+

2. TeF_5^-, X_eF_2, I_3^+, X_eF_4, PCl_3. Which of the following shape does not describe to any of the above species?
(A) Square pyramidal
(B) Square planar
(C) Trigonal planar
(D) Linear

3. Find the species /molecule is having maximum number of lone pair on the central atom.
(A) $ClOF_4^-$ (B) $ClOF_2^+$
(C) BH_4^- (D) $XeOF_2$

4. What is the hybridisation of C-atoms bonded by the triple bond in benzyne.
(A) sp (B) sp^2
(C) sp^3 (D) Can't be predicted

5. The orbital involved in case of sp^3d^2 hybridisation is
(A) $s + p_x + p_y + d_{xy} + p_z + d_{z^2}$
(B) $s + p_x + p_y + d_{z^2} + p_z + d_{yz}$
(C) $s + p_x + p_y + p_z + d_{z^2} + d_{x^2-y^2}$
(D) $s + p_x + p_y + p_z + d_{yz} + d_{xz}$

6. If pure 'p' orbitals are involved in molecule formation, then the shape of H_3O^+ will be
(A) Pyramidal (B) Tetrahedral
(C) Angular (D) Planar

7. The species which is not tetrahedral in shape is
(A) ICl_4^- (B) BF_4^-
(C) AlH_4^- (D) $\overset{\ominus}{N}F_4$

8. Which of the following pair of species is not isostructural?
(A) KrF_2, ICl_2^- (B) SO_3, SO_3^{2-}
(C) CO_3^{2-}, BO_3^{3-} (D) SiO_4^{4-}, IO_4^-

9. Find the pair of species having same shape but different hybridisation.
(A) SO_3, CO_3^{2-} (B) NO_2^-, ClO_2^-
(C) $BeCl_2$, HCN (D) XeF_2, $SnCl_2$

10. d_{z^2} orbital is present in which of the following hybridisation.
(A) sp^3d (Square pyramidal)
(B) sp^3
(C) sp^3d^2
(D) sp^3d^4 (square anti prismatic)

11. Which of the following molecule has two π-bonds in it's structure.
(A) $\overset{\ominus}{N}_3$ (B) SCN^-
(C) C_3^{4-} (D) All are correct

12. Shape of NH_4^+ and BF_4^- are:
(A) Tetrahedral&Tetrahedral
(B) Pyramidal&Tetrahedral
(C) Square planar & Tetrahedral
(D) Tetrahederal & Trigonal planar

13. Which of the following is T-shaped?
(A) PCl_3 (B) BCl_3
(C) NH_3 (D) ClF_3

14. Which of the following is linear?
(A) CO_2 (B) $BeCl_2$
(C) NO_2^+ (D) All of these

15. $F_3B + :NH_3 \longrightarrow F_3B \leftarrow :NH_3$
What will be the hybridisation of B and N respectively?
(A) sp^3, sp^3 (B) sp^2, sp^3
(C) sp^2, sp^2 (D) sp^2, sp^2

Answer Key

1. (D)
2. (C)
3. (D)
4. (B)
5. (C)
6. (A)
7. (A)
8. (B)
9. (B)
10. (C)
11. (D)
12. (A)
13. (D)
14. (D)
15. (A)

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