



Arjuna 2.0 JEE 2026

T.F.T. - 04

Chemical Bonding

By ATS Sir

- What is the formal charge on nitrogen in NO_3^- ?
(A) +3 (B) +1
(C) -1 (D) +4
- The number of π -bonds and σ -bonds in the octet structure of SO_3 is
(A) $3\sigma, 3\pi$ (B) $3\sigma, 2\pi$
(C) $3\sigma, 1\pi$ (D) None of these
- Which of the following is correct Lewis Dot structure for N_3^- ?
(A) $\text{:N} \equiv \text{N} - \ddot{\text{N}}:$ (B) $\ddot{\text{N}} = \ddot{\text{N}}^+ = \ddot{\text{N}}^-$
(C) $\ddot{\text{N}}^- = \ddot{\text{N}}^+ = \ddot{\text{N}}:$ (D) $\ddot{\text{N}} = \ddot{\text{N}}^+ = \ddot{\text{N}}^{2-}$
- Which of the following molecules/species has the minimum number of lone pairs?
(A) ICl_3 (B) BF_4^-
(C) SnCl_2 (D) XeF_4
- The correct order of increasing C–O bond strength of CO , CO_3^{2-} is:
(A) $\text{CO}_3^{2-} < \text{CO}_2 < \text{CO}$
(B) $\text{CO}_2 < \text{CO}_3^{2-} < \text{CO}$
(C) $\text{CO} < \text{CO}_3^{2-} < \text{CO}_2$
(D) $\text{CO} < \text{CO}_2 < \text{CO}_3^{2-}$
- The correct order of Cl–O bond order is:
(A) $\text{ClO}_3^- < \text{ClO}_4^- < \text{ClO}_2^- < \text{ClO}^-$
(B) $\text{ClO}^- < \text{ClO}_4^- < \text{ClO}_3^- < \text{ClO}_2^-$
(C) $\text{ClO}^- < \text{ClO}_2^- < \text{ClO}_3^- < \text{ClO}_4^-$
(D) $\text{ClO}_4^- < \text{ClO}_3^- < \text{ClO}_2^- < \text{ClO}^-$
- Which of the following order is/are correct :-
(A) $\text{CO}_3^{2-} < \text{CO}_2$ (C – O bond length)
(B) $\text{NO}_3^- < \text{NO}_2^+$ (N–O bond length)
(C) $\text{O}_2 < \text{O}_3$ (O–O bond length)
(D) $\text{C}_6\text{H}_6 < \text{C}_2\text{H}_4$ (C–C bond length)
- The oxidation states of carbon in carbon sub oxide $\text{O}=\text{C}=\text{C}=\text{C}=\text{O}$ are:-
(A) +2, -2 (B) 0, +2
(C) -1, +2 (D) Only +2
- Select the correct statement for CO_3^{2-} ion:-
(A) Carbon accepts two electrons additionally
(B) One oxygen atom accepts two electron additionally
(C) Carbon atom forms three sigma bonds and two pie bonds
(D) None of these
- For which specie number of lone pair and bond pair can not be calculated accurately by lewis dot method.
(A) BF_3 (B) NO_2^-
(C) NH_4^+ (D) SnCl_3^-
- Which of the following specie has 'π' co-ordinate bond.
(A) O_3 (B) SiF_6^{2-}
(C) CO (D) NO_3^-
- Find the total number of σ and π bonds in HCP :-
(A) $2\sigma, 1\pi$ (B) $2\sigma, 2\pi$
(C) $1\sigma, 2\pi$ (D) Molecule does not exist
- The number of σ and π bonds in cyanogen gas $(\text{CN})_2$ are:-
(A) $2\sigma + 3\pi$ (B) $3\sigma + 2\pi$
(C) $3\sigma + 4\pi$ (D) $4\sigma + 3\pi$
- Which of the following having highest σ and π ratio.
(A) CO (B) CO_2
(C) C_2H_4 (D) N_2
- Species in which underlined atom has (-1) formal charge:-
(A) $\underline{\text{C}}\text{N}^-$ (B) $\underline{\text{N}}\text{O}_3^-$
(C) $\underline{\text{P}}\text{Cl}_3$ (D) $\underline{\text{C}}\text{S}_2$

Answer Key

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

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