



MARGSHREE CLASSES PVT. LTD.

IIT-JEE / NEET / FOUNDATION (IX & X)

Time: 2 hours

Chemistry | IIT-JEE

Marks: 50

(Chemical Bonding)

NAME OF THE STUDENT:- _____

DATE:- _____

INSTRUCTION – ATTEMPT ALL QUESTIONS

- Q.1. The correct order of increasing bond angles in the following triatomic species is
- (a) $NO_2^+ < NO_2 < NO_2^-$ (b) $NO_2^+ < NO_2^- < NO_2$
(c) $NO_2 < NO_2^+ < NO_2^-$ (d) $NO_2^- < NO_2 < NO_2^+$
- Q.2. The correct order of C – O bond length among CO, CO_3^{2-} , CO_2 is
- (a) $CO < CO_3 < CO_2$ (b) $CO_3 < CO_2 < CO$
(c) $CO < CO_2 < CO_3^{2-}$ (d) $CO_2 < CO_3^{2-} < CO$
- Q.3. The electronegativity difference between N and F is greater than that between N and H yet the dipole moment of NH_3 (1.5 D) is larger than that of NF_3 (0.2 D). This is because
- (a) in NH_3 the atomic dipole and bond dipole are in the opposite directions whereas in NF_3 these are in the same direction
(b) in NH_3 as well as in NF_3 the atomic dipole and bond dipole are in the same direction
(c) in NH_3 the atomic dipole and bond dipole are in the same direction whereas in NF_3 these are in opposite directions
(d) in NH_3 as well as in NF_3 the atomic dipole and bond dipole are in opposite directions.
- Q.4. The correct order in which the O – O bond length increases in the following is
- (a) $O_2 < H_2O_2 < O_3$ (b) $O_3 < H_2O_2 < O_2$
(c) $H_2O_2 < O_2 < O_3$ (d) $O_2 < O_3 < H_2O_2$
- Q.5. The Correct sequence of increasing covalent character is represented by
- (a) $LiCl < NaCl < BeCl_2$ (b) $BeCl_2 < LiCl < NaCl$
(c) $NaCl < LiCl < BeCl_2$ (d) $BeCl_2 < NaCl < LiCl$

Q.6. Which of the following would have a permanent dipole moment?
(a) SiF_4 (b) SF_4 (c) XeF_4 (d) BF_3

Q.7. H_2O is dipolar, whereas BeF_2 is not. It is because
(a) the electronegativity of F is greater than that of O
(b) H_2O involves hydrogen bonding whereas BeF_2 is a discrete molecule
(c) H_2O is linear and BeF_2 is angular
(d) H_2O is angular and BeF_2 is linear.

Q.8. Which of the following molecules does not possess a permanent dipole moment?
(a) CS_2 (b) SO_3 (c) H_2S (d) SO_2

Q.9. The table shown below gives the bond dissociation energies (E_{diss}) for single covalent bonds - of carbon (C) atoms with element A, B, C and D. Which element has the smallest atoms?

Bond	E_{diss} (KJ mol^{-1})
C-A	240
C-B	328
C-C	276
C-D	485

(a) C (b) D (c) A (d) B

Q.10. Strongest bond is in between
(a) CsF (b) NaCl (c) Both (a) and (b) (d) none of the above