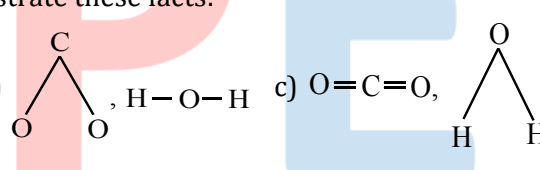

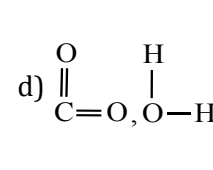


Class : XIth
Date :

Subject : CHEMISTRY
DPP No. : 8

Topic :- Chemical Bonding and Molecular Structure

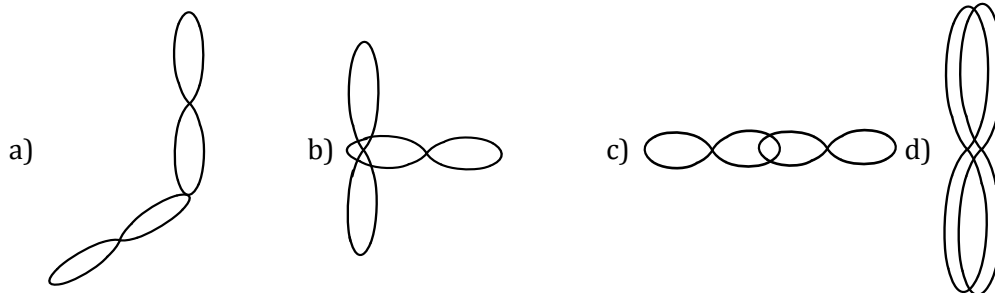
- The equilateral triangle shape has:
a) sp -hybridization b) sp^2 -hybridization c) sp^3 -hybridization d) sp^3d -hybridization
- Which of the following has fractional bond order?
a) O_2^{2+} b) O_2^{-} c) F_2^{-} d) H_2^{-}
- For which of the following hybridization the bond angle is maximum?
a) sp^2 b) sp c) sp^3 d) dsp^2
- Experiment shows that H_2O has a dipole moment whereas, CO_2 has not. Point out the structures which best illustrate these facts:
 a) $O=C=O, H-O-H$ b)  c) $O=C=O,$  d) 
- In $TeCl_4$, the central atom tellurium involves
a) sp^3 hybridisation b) $sp^3 d$ hybridization c) $sp^3 d^2$ hybridisation d) dsp^2 hybridisation
- Stability of hydrides generally increases with:
a) Increase in bond angle
b) Decrease in bond angle
c) Decrease in resonance
d) None of these
- Which of the following is isoelectronic with CO_2 ?
a) NO_2 b) NO c) N_2O d) N_2O_4
- Which can be described as a molecule with residual bonding capacity?
a) N_2 b) CH_4 c) $NaCl$ d) $BeCl_2$

9. Lattice energy of an ionic compound depends upon
- a) Charge on the ion and size of the ion b) Packing of ions only
 c) Size of the ion only d) Charge on the ion only
10. Identify the correct statement from below, concerning the structure of $\text{CH}_2 = \text{C} = \text{CH}_2$
- a) The molecule is planar b) One of the three carbon atoms is in an- sp^3 hybridised state
 c) The molecule is non-planar with the two H_2 groups being in planes perpendicular to each other d) All the carbon atoms are sp -hybridized

11. (i) $\text{H} - \text{C} - \text{H}$ angle in CH_4
 (ii) $\text{Cl} - \text{B} - \text{Cl}$ angle in BCl_3
 (iii) $\text{F} - \text{I} - \text{F}$ angle in IF_7 in a plane
 (iv) $\text{I} - \text{I} - \text{I}$ angle in I_3^-
- Increasing order of above bond angles is
- a) (i) < (ii) < (iii) < (iv) b) (ii) < (i) < (iii) < (iv)
 c) (iii) < (i) < (ii) < (iv) d) (iv) < (ii) < (i) < (iii)

12. Among the following elements, the most electronegative is:
- a) Oxygen b) Chlorine c) Nitrogen d) Fluorine
13. Metallic bonds do not play a role in:
- a) Brass b) Copper c) Germanium d) Zinc

14. Which p -orbitals overlapping would give the strongest bond?



15. H_2O boils at higher temperature than H_2S because it is capable of forming:
- a) Ionic bonds b) Covalent bonds c) Hydrogen bonds d) Metallic bonds
16. When two atomic orbitals combine, they form:
- a) One molecular orbitals
 b) Two molecular orbitals
 c) Two bonding molecular orbitals
 d) Two antibonding molecular orbitals

17. The correct increasing covalent nature is:
 a) $\text{NaCl} < \text{LiCl} < \text{BeCl}_2$ b) $\text{BeCl}_2 < \text{NaCl} < \text{LiCl}$ c) $\text{BeCl}_2 < \text{LiCl} < \text{NaCl}$ d) $\text{LiCl} < \text{NaCl} < \text{BeCl}_2$
18. IP_1 and IP_2 of Mg are 178 and 348 kcal mol⁻¹. The energy required for the reaction, $\text{Mg} \rightarrow \text{Mg}^{2+} + 2\text{e}^-$ is:
 a) +170 kcal b) +526 kcal c) -170 kcal d) -526 kcal
19. The electronic configuration
 $(\sigma 1s)^2 (\sigma^* 1s)^2 (\sigma 2s)^2 (\sigma^* 2s)^2 (\sigma 2p_x)^2$
 $(\pi 2p_y)^2 (\pi 2p_z)^2 (\pi^* 2p_y)^2 (\pi^* 2p_z)^1$
 can be assigned to
 a) O_2 b) O_2^+ c) O_2^- d) O_2^{2-}
20. Some of the properties of the two species, NO_3^- and H_3O^+ are described below. Which one of them is correct?
 a) Dissimilar in hybridization for the central atom with different structure
 b) Isostructural with same hybridization for the central atom
 c) Isostructural with different hybridization for the central atom
 d) Similar is hybridization for the central atom with different structure