



INDIAN SCHOOL DARSAIT
DEPARTMENT OF CHEMISTRY



Subject : CHEMISTRY		Topic : Chemical Bonding and Molecular structure		Date of Worksheet : 23. 10.2018	
Resource Person: ROHITHA P N		Date of Submission : -----			
Name of the Student : _____		Class & Division : XI		Roll Number :-----	
1	Why He ₂ molecule does not exist?				1
2	Although B-F bonds are polar, BF ₃ is a non-polar molecule. Explain.				1
3	O- Nitro phenol is lower in boiling point than p-nitro phenol. Why?				1
4	Although NH ₃ and H ₂ O are sp ³ hybridized, bond angle in water is less than NH ₃ . Why?				1
5	Out of H ₂ O and CH ₃ OH which has higher boiling point. Why?				1
6	H ₂ S is a gas and H ₂ O is a liquid at room temperature. Why?				1
7	In SF ₄ molecule, the lone pair of electrons occupies equatorial position in preference to axial position. Why? What is the shape the molecule				2
8	Distinguish between BMO and ABMO.				2
9	CO ₂ & H ₂ O are both triatomic molecules but dipole moment of CO ₂ is zero where as that of H ₂ O is 1.83D. Why?				2
10	Out of NH ₃ & NF ₃ which has higher dipole moment. Why?				2
11	What is meant by hybridization? Explain the hybridization of acetylene molecule.				3
12	Describe hybridization of PCl ₅ . Why is it more reactive?				3
13	Compare the stabilities of O ₂ , O ₂ ⁻ , O ₂ ⁺ , O ₂ ²⁻ and indicate their magnetic properties.				3
14	Define hydrogen bond. What are its types?				3
15	Explain Fajan's rule with suitable examples.				3
16.	Account for the following : (a) ClF ₃ is T-shaped. (b) Sigma bond is stronger than Pi-bond. (c) Oxygen is para magnetic. (d) Bonds in ozone are equivalent. (e) Acetic acid forms dimer. (g) HF has a higher boiling point than HCl				1 each
17.	Explain the formation of H ₂ molecule on the basis of valence bond theory. Also give the potential energy diagram				3
18.	Differentiate between : (a) Bond enthalpy and bond dissociation enthalpy. (b) Sigma bond and pi bond. (c) Bonding and anti-bonding molecular orbitals.				1 each
19.	Explain why N ₂ has greater bond dissociation energy than N ₂ ⁺ whereas O ₂ has lesser bond dissociation energy than O ₂ ⁺ ?				3

