INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH: 4 CHEMICAL BONDING

Name: _____ Date:_____ Class: XI Sec: ___

Answer the following

1. Why is LiI more covalent than LiF?
2. The dipole moment of hydrogen halides decreases from HF to HI. Explain this trend.

   Give reasons for the following

   a) NF_3 is pyramidal while BF_3 is triangular planar.

   b) Bond angle in water is larger than that in H_2S.

   c) BeH_2 molecule has a zero dipole moment although the Be - H bonds are polar.
3. Discuss the shape of the following molecules using VSEPR theory. a) $BeCl_2$ b) NH_3
4. What is resonance? Explain with examples.
5. Which bond is stronger σ or π and why?
6. What types of hybridization are involved with the central atom of molecules having following shapes?

   a)Planar b) regular tetrahedral c) square pyramidal d)octahedral e) trigonal pyramidal
7. Molecular nitrogen is not reactive. Explain on the basis of MO theory.
8. Write the molecular orbital electronic configurations of the following species.

   a) N_2 b) F_2^+ c) B_2. Predict their magnetic nature and stability.
9. Distinguish between inter molecular and intra molecular hydrogen bonding with examples.
10. Why H_2O is liquid while H_2S is gas at room temperature?
11. Why boiling point of HF is greater than HCl?
12. From each of the following pairs select the molecule with higher value of property mentioned.

    i) NH_3, BF_3 Dipolemoment ii) NF_3, NH_3 Dipolemoment

    iii) H_2O , NH_3Bond angle iv) HCl, HBr ionic character
13. Why PCl_5 exists but NCl_5 does not?
14. Differentiate between atomic orbital and molecular orbital.
15. In SF_4, the lone pair of electrons occupies at the equatorial position than axial position. Why?