

UNIT- 10 – CHEMICAL BONDING**I. Answer in brief (2/3 marks)**

1. Define the following i) Bond order ii) Hybridisation iii) σ - bond.
2. What is a pi bond?
3. In CH_4 , NH_3 and H_2O , the central atom undergoes sp^3 hybridisation - yet their bond angles are different. Why?
4. What is dipole moment?
5. Define bond energy.
6. Draw the Lewis structures for the following species.
i) NO_3^- ii) SO_4^{2-} iii) HNO_3 iv) O_3
7. Explain the bond formation in ethylene and acetylene.

II. Answer in a paragraph (5 marks)

1. Explain Sp^2 hybridisation in BF_3 .
2. Draw the M.O diagram for oxygen molecule calculate its bond order and show that O_2 is paramagnetic.
3. Draw MO diagram of CO and calculate its bond order.
4. What do you understand by Linear combination of atomic orbitals in MO theory?
5. Discuss the formation of N_2 molecule using MO Theory
6. Explain the bond formation in BeCl_2 and MgCl_2 .
7. Explain VSEPR theory. Applying this theory to predict the shapes of IF_7 , and SF_6