



Chemistry By Siddiqui

CHEMISTRY BY SIDDIQUI – ASSIGNMENT PAPER 1

Chemical Structures & Bonding

- What is the difference between an ionic bond and a covalent bond?
- What is electronegativity and how does it relate to chemical bonding?
- Explain the difference between a polar covalent bond and a nonpolar covalent bond.
- What is metallic bonding and what are some properties of metals that result from this type of bonding?
- What are intermolecular forces and how do they affect the physical properties of molecules?
- What is hybridization and how does it relate to the geometry of molecules?
- Draw the Lewis dot structure for CO₂ and explain the bonding in this molecule.
- Explain the relationship between the molecular geometry of a molecule and its polarity.
- What is the difference between a sigma bond and a pi bond?
- What are resonance structures and how are they used to describe the bonding in certain molecules?
- Draw the Lewis dot structure for H₂O and explain the bonding in this molecule.
- What is a dipole moment and how does it relate to molecular polarity?
- What is the difference between a Lewis acid and a Lewis base?
- Explain the difference between an endothermic and exothermic reaction in terms of energy changes during a chemical reaction.
- Draw the Lewis dot structure for NH₃ and explain the bonding in this molecule.
- What is the relationship between bond length and bond strength?
- Explain the difference between a single bond, a double bond, and a triple bond.
- What is a hybrid orbital and how does it differ from a pure atomic orbital?
- What is the relationship between bond order and bond energy?
- Draw the Lewis dot structure for CH₄ and explain the bonding in this molecule.