**Chapter 7- Covalent Molecules, Networks and Layers**

**Key Knowledge**

* Models of bonding to explain observed properties including melting temperature, electrical conductivity, chemical reactivity of molecular substances, network lattices, layer lattices.
* Shape of molecules, polarity of bonds, intermolecular forces in molecular substances.

**Chapter Outcomes**

* Describe the general physical properties of covalent molecular substances, covalent molecular substances, covalent network lattice substances and covalent layer lattice substances.
* Describe models for the structure and bonding of covalent molecular substances and use models to explain their properties.
* Draw diagrams showing how electrons are shared between atoms in a molecule.
* Draw electron dot formulas for simple molecular substances.
* Draw valence structures for simple molecular compounds.
* Predict whether a molecule is polar or non-polar.
* Deduce the types of intermolecular bonding between molecules.
* Describe models for the structure and bonding of covalent network and layer lattice substances and use the models to explain their properties.