**[CHEMISTRY](http://www.result.pk)**

[For Class IX (marks 65)](http://www.result.pk)

**[1. FUNDAMENTALS OF CHEMISTRY](http://www.result.pk)**

 **[Introduction](http://www.result.pk)**

 **[1.1 Branches of Chemistry](http://www.result.pk)**

[Physical Chemistry, Organic Chemistry, Inorganic Chemistry, Biochemistry, Industrial Chemistry, Nuclear Chemistry, Environmental Chemistry, Analytical Chemistry](http://www.result.pk)

 **[1.2 Basic Definitions](http://www.result.pk)**

 [1.2.1 Elements, Compounds and Mixtures](http://www.result.pk)

[1.2.2 Atomic Number, Mass Number](http://www.result.pk)

[1.2.3 Relative Atomic Mass and Atomic Mass Unit](http://www.result.pk)

[1.2.4 Empirical Formula, Molecular Formula](http://www.result.pk)

[1.2.5 Molecular Mass and Formula Mass](http://www.result.pk)

**[1.3 Chemical Species](http://www.result.pk)**

[1.3.1 Ions (Cations, Anions), Molecular Ions and Free Radicals.](http://www.result.pk)

[1.3.2 Types of Molecules (Monatomic, Polyatomic, Homoatomic, Heteroatomic)](http://www.result.pk)

**[1.4 Avogadro’s Number and Mole](http://www.result.pk)**

[1.4.1 Avogadro’s Number](http://www.result.pk)

[1.4.2 Mole](http://www.result.pk)

[1.4.3 Gram Atomic Mass, Gram Molecular and Gram Formula Mass](http://www.result.pk)

**[1.5 Chemical Calculations](http://www.result.pk)**

[1.5.1 Mole-Mass Calculations](http://www.result.pk)

[1.5.2 Mole-Particle Calculations](http://www.result.pk)

**[2. STRUCTURE OF ATOMS](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[2.1 Theories and Experiments Related To Atomic Structure](http://www.result.pk)**

[2.1.1 Rutherford’s Atomic Model (Experiment and Postulates)](http://www.result.pk)

[2.1.2 Bohr’s Atomic Theory (Postulates)](http://www.result.pk)

**[2.2 Electronic Configuration](http://www.result.pk)**

[2.2.1 Concepts of S and P Sub-Shells](http://www.result.pk)

[2.2.2 Electronic Configurations of First 18 Elements](http://www.result.pk)

**[2.3 Isotopes](http://www.result.pk)**

[2.3.1 Definition](http://www.result.pk)

[2.3.2 Examples (H, C, Cl, U)](http://www.result.pk)

[2.3.3 Uses](http://www.result.pk)

**[3. PERIODIC TABLE AND PERIODICITY OF PROPERTIES](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[3.1 Periodic Table](http://www.result.pk)**

[3.1.1 Periods](http://www.result.pk)

[3.1.2 Groups](http://www.result.pk)

**[3.2 Periodicity of Properties](http://www.result.pk)**

[3.2.1 Atomic Size](http://www.result.pk)

[3.2.2 Ionization Energy](http://www.result.pk)

[3.2.3 Electron Affinity](http://www.result.pk)

[3.2.4 Shielding Effect](http://www.result.pk)

[3.2.5 Electronegativity](http://www.result.pk)

**[4. STRUCTURE OF MOLECULES](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[4.1 Why do Atoms Form Chemical Bonds?](http://www.result.pk)**

**[4.2 Chemical Bonds](http://www.result.pk)**

**[4.3 Types of Bonds](http://www.result.pk)**

[4.3.1 Ionic Bonds](http://www.result.pk)

[4.3.2 Covalent Bonds](http://www.result.pk)

[4.3.3 Dative Covalent Bonds](http://www.result.pk)

[4.3.4 Polar and Non-Polar Bonds](http://www.result.pk)

[4.3.5 Metallic Bonds](http://www.result.pk)

**[4.4 Intermolecular Forces](http://www.result.pk)**

[4.4.1 Dipole-Dipole Interactions](http://www.result.pk)

[4.4.2 Hydrogen Bonding](http://www.result.pk)

**[4.5 Nature of Bonding and Properties](http://www.result.pk)**

[4.5.1 Ionic Compounds](http://www.result.pk)

[4.5.2 Covalent Compounds](http://www.result.pk)

[4.5.3 Polar and Non-Polar Compounds](http://www.result.pk)

[4.5.4 Metals](http://www.result.pk)

**[5. PHYSICAL STATES OF MATTER](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[Gaseous State](http://www.result.pk)**

**[5.1 Typical Properties](http://www.result.pk)**

[(Diffusion, Effusion, Pressure, Compressibility, Mobility, Density)](http://www.result.pk)

**[5.2 Laws Related To Gases](http://www.result.pk)**

[5.2.1 Boyle’s Law](http://www.result.pk)

[5.2.2 Charles’s Law](http://www.result.pk)

**[Liquid State](http://www.result.pk)**

**[5.3 Typical Properties](http://www.result.pk)**

[(Evaporation, Vapour Pressure, Boiling Point, Freezing Point, Diffusion, Mobility, Density and Factors affecting them.)](http://www.result.pk)

**[Solid State](http://www.result.pk)**

**[5.4 Typical Properties](http://www.result.pk)**

[(Melting Point, Rigidity, Density)](http://www.result.pk)

**[5.5 Types of Solids](http://www.result.pk)**

[5.5.1 Amorphous](http://www.result.pk)

[5.5.2 Crystalline State](http://www.result.pk)

**[5.6 Allotropy](http://www.result.pk)**

**[6. SOLUTIONS](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[6.1 Solution, Aqueous Solution, Solute and Solvent](http://www.result.pk)**

**[6.2 Saturated, Unsaturated, Supersaturated Solutions and Dilution of Solution](http://www.result.pk)**

**[6.3 Types of Solution](http://www.result.pk)**

[6.3.1 Solution of Gases (Gases in Gases, Gases in Liquids, Gases in Solids)](http://www.result.pk)

[6.3.2 Solution of Liquids (Liquids in Gases, Liquids in Liquids, Liquids in Solids)](http://www.result.pk)

[6.3.3 Solutions of Solids (Solids in Gases, Solids in Liquids, Solids in Solids)](http://www.result.pk)

**[6.4 Concentration Units](http://www.result.pk)**

[6.4.1 Percentage](http://www.result.pk)

[6.4.2 Molarity](http://www.result.pk)

[6.4.3 Problems Involving the Molarity of a Solution](http://www.result.pk)

**[6.5 Solubility](http://www.result.pk)**

[6.5.1 Solubility and Solute – Solvent Interaction](http://www.result.pk)

[6.5.2 Effect of Temperature on Solubility](http://www.result.pk)

**[6.6 Comparison of Solutions, Suspension and Colloids](http://www.result.pk)**

[6.6.1 Solutions](http://www.result.pk)

[6.6.2 Colloids](http://www.result.pk)

[6.6.3 Suspension (Turbidity)](http://www.result.pk)

**[7. ELECTROCHEMISTRY](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[7.1 Oxidation and Reduction](http://www.result.pk)**

**[7.2 Oxidation States and Rules for Assigning Oxidation States](http://www.result.pk)**

**[7.3 Oxidizing and Reducing Agents](http://www.result.pk)**

**[7.4 Oxidation - Reduction Reactions](http://www.result.pk)**

**[7.5 Electrochemical Cells](http://www.result.pk)**

[7.5.1 Concept of Electrolytes](http://www.result.pk)

[7.5.2 Electrolytic Cells](http://www.result.pk)

[7.5.3 Galvanic Cells (Daniel Cell)](http://www.result.pk)

**[7.6 Electrochemical Industries](http://www.result.pk)**

[7.6.1 Manufacture of Sodium Metal from Fused NaCl](http://www.result.pk)

[7.6.2 Manufacture of NaOH from Brine and its properties](http://www.result.pk)

**[7.7 Corrosion and Its Prevention](http://www.result.pk)**

[7.7.1 Rusting of Iron](http://www.result.pk)

[7.7.2 Electroplating of Tin, Zinc, Silver and Chromium on Steel](http://www.result.pk)

**[8. CHEMICAL REACTIVITY](http://www.result.pk)**

**[Introduction](http://www.result.pk)**

**[8.1 Metals](http://www.result.pk)**

[8.1.1 Electropositive Character](http://www.result.pk)

[8.1.2 Comparison of Reactivity of Alkali and Alkaline Earth Metals](http://www.result.pk)

[8.1.3 Inertness of Noble Metals](http://www.result.pk)

**[8.2 Non- Metals](http://www.result.pk)**

[8.2.1 Electronegative Character](http://www.result.pk)

[8.2.2 Comparison of Reactivity of the Halogens](http://www.result.pk)

**[RECOMMENDED REFERENCE BOOKS FOR CLASS IX](http://www.result.pk)**

 [The question paper will be syllabus oriented. However, the following book is recommended for reference and supplementary reading:](http://www.result.pk)

 [1. An-interactive approach](http://www.result.pk)

[Chemistry](http://www.result.pk)

[for Class IX](http://www.result.pk)

 [National Book Foundation, Islamabad](http://www.result.pk)