

Chemistry

Part I

Textbook for Class XI



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FOREWORD

The National Curriculum Framework (NCF), 2005 recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that, given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge.

These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required number of teaching days are actually devoted to teaching. The methods used for teaching and evaluation will also determine how effective this textbook proves for making children's life at school a happy experience, rather than a source of stress or boredom. Syllabus designers have tried to address the problem of curricular burden by restructuring and reorienting knowledge at different stages with greater consideration for child psychology and the time available for teaching. The textbook attempts to enhance this endeavour by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups, and activities requiring hands-on experience.

The National Council of Educational Research and Training (NCERT) appreciates the hard work done by the textbook development committee responsible for this book. We wish to thank the Chairperson of the advisory group in science and mathematics, Professor J.V. Narlikar and the Chief Advisor for this book, Professor B. L. Khandelwal for guiding the work of this committee. Several teachers contributed to the development of this textbook; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. As an organisation committed to systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

New Delhi
20 December 2005

Director
National Council of Educational
Research and Training



Under My Scheme

Thus, I claim that I am not an enemy of Higher Education. But I am an enemy of Higher Education as it is given in this country. Under my scheme, there will be more and better libraries, more and better laboratories, more and better research institutes. Under it, we should have an army of chemists, engineers and other experts who will be real servants of the nation and answer the varied and growing requirements of people who are becoming increasingly conscious of their rights and wants. And all these experts will speak, not a foreign language, but the language of the people. The knowledge gained by them will be the common property of the people. There will be truly original work instead of mere imitation. And the cost will be evenly and justly distributed.

- Harijan : 9 July 1938

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CONTENTS

| | | |
|---------------|---|------------|
| | Foreword | iii |
| Unit 1 | Some Basic Concepts of Chemistry | 1 |
| | 1.1 Importance of Chemistry | 4 |
| | 1.2 Nature of Matter | 4 |
| | 1.3 Properties of Matter and their Measurement | 6 |
| | 1.4 Uncertainty in Measurement | 10 |
| | 1.5 Laws of Chemical Combinations | 14 |
| | 1.6 Dalton's Atomic Theory | 16 |
| | 1.7 Atomic and Molecular Masses | 16 |
| | 1.8 Mole Concept and Molar Masses | 18 |
| | 1.9 Percentage Composition | 18 |
| | 1.10 Stoichiometry and Stoichiometric Calculations | 20 |
| Unit 2 | Structure of Atom | 29 |
| | 2.1 Discovery of Sub-atomic Particles | 30 |
| | 2.2 Atomic Models | 32 |
| | 2.3 Developments Leading to the Bohr's Model of Atom | 37 |
| | 2.4 Bohr's Model for Hydrogen Atom | 46 |
| | 2.5 Towards Quantum Mechanical Model of the Atom | 49 |
| | 2.6 Quantum Mechanical Model of Atom | 53 |
| Unit 3 | Classification of Elements and Periodicity in Properties | 74 |
| | 3.1 Why do we Need to Classify Elements ? | 74 |
| | 3.2 Genesis of Periodic Classification | 75 |
| | 3.3 Modern Periodic Law and the present form of the Periodic Table | 79 |
| | 3.4 Nomenclature of Elements with Atomic Numbers > 100 | 79 |
| | 3.5 Electronic Configurations of Elements and the Periodic Table | 82 |
| | 3.6 Electronic Configurations and Types of Elements: <i>s</i> -, <i>p</i> -, <i>d</i> -, <i>f</i> - Blocks | 83 |
| | 3.7 Periodic Trends in Properties of Elements | 86 |

| | | |
|---------------|---|------------|
| Unit 4 | Chemical Bonding and Molecular Structure | 100 |
| 4.1 | Kössel-Lewis Approach to Chemical Bonding | 101 |
| 4.2 | Ionic or Electrovalent Bond | 106 |
| 4.3 | Bond Parameters | 107 |
| 4.4 | The Valence Shell Electron Pair Repulsion (VSEPR) Theory | 112 |
| 4.5 | Valence Bond Theory | 117 |
| 4.6 | Hybridisation | 120 |
| 4.7 | Molecular Orbital Theory | 125 |
| 4.8 | Bonding in Some Homonuclear Diatomic Molecules | 129 |
| 4.9 | Hydrogen Bonding | 131 |
| Unit 5 | States of Matter | 136 |
| 5.1 | Intermolecular Forces | 137 |
| 5.2 | Thermal Energy | 139 |
| 5.3 | Intermolecular Forces vs Thermal Interactions | 139 |
| 5.4 | The Gaseous State | 139 |
| 5.5 | The Gas Laws | 140 |
| 5.6 | Ideal Gas Equation | 145 |
| 5.7 | Kinetic Energy and Molecular Speeds | 147 |
| 5.8 | Kinetic Molecular Theory of Gases | 149 |
| 5.9 | Behaviour of Real Gases: Deviation from Ideal Gas Behaviour | 150 |
| 5.10 | Liquefaction of Gases | 152 |
| 5.11 | Liquid State | 154 |
| Unit 6 | Thermodynamics | 160 |
| 6.1 | Thermodynamic Terms | 161 |
| 6.2 | Applications | 164 |
| 6.3 | Measurement of ΔU and ΔH : Calorimetry | 169 |
| 6.4 | Enthalpy Change, $\Delta_r H$ of a Reaction – Reaction Enthalpy | 171 |
| 6.5 | Enthalpies for Different Types of Reactions | 176 |
| 6.6 | Spontaneity | 181 |
| 6.7 | Gibbs Energy Change and Equilibrium | 186 |

| | | |
|---------------|---|------------|
| Unit 7 | Equilibrium | 192 |
| 7.1 | Equilibrium in Physical Processes | 193 |
| 7.2 | Equilibrium in Chemical Processes – Dynamic Equilibrium | 196 |
| 7.3 | Law of Chemical Equilibrium and Equilibrium Constant | 198 |
| 7.4 | Homogeneous Equilibria | 201 |
| 7.5 | Heterogeneous Equilibria | 203 |
| 7.6 | Applications of Equilibrium Constants | 205 |
| 7.7 | Relationship between Equilibrium Constant K , Reaction Quotient Q and Gibbs Energy G | 208 |
| 7.8 | Factors Affecting Equilibria | 208 |
| 7.9 | Ionic Equilibrium in Solution | 212 |
| 7.10 | Acids, Bases and Salts | 213 |
| 7.11 | Ionization of Acids and Bases | 216 |
| 7.12 | Buffer Solutions | 226 |
| 7.13 | Solubility Equilibria of Sparingly Soluble Salts | 228 |
| | Appendices | 239 |
| | Answer to some Selected Questions | 253 |
| | Index | 259 |

Our National Anthem

*Jana-gana-mana adhinayaka, jaya he
Bharata-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchhala-jaladhi-taranga.
Tava shubha name jage,
Tava shubha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!*

Our National Anthem, composed originally in Bangla by Rabindranath Tagore, was adopted in its Hindi version by the Constituent Assembly as the national anthem of India on 24 January 1950.