

Chemistry

Part I

Textbook for Class XI



11082



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

ISBN 81-7450-494-X (Part I)
81-7450-535-0 (Part II)

First Edition

March 2006

Phalguna 1927

Reprinted

October 2006

Kartika 1928

November 2007

Kartika 1929

January 2009

Magha 1930

December 2009

Pausa 1931

November 2010

Kartika 1932

January 2012

Pausa 1933

November 2012

Kartika 1934

November 2013

Kartika 1935

December 2014

Pausa 1936

May 2016

Vaishakha 1938

January 2018

Magha 1939

December 2018

Agrahayana 1940

October 2019

Ashwina 1941

January 2021

Pausa 1942

PD 184T RSP

© **National Council of Educational
Research and Training, 2006**

₹

*Printed on 80 GSM paper with NCERT
watermark*

Published at the Publication Division by the
Secretary, National Council of Educational
Research and Training, Sri Aurobindo Marg,
New Delhi 110 016 and printed at

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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).

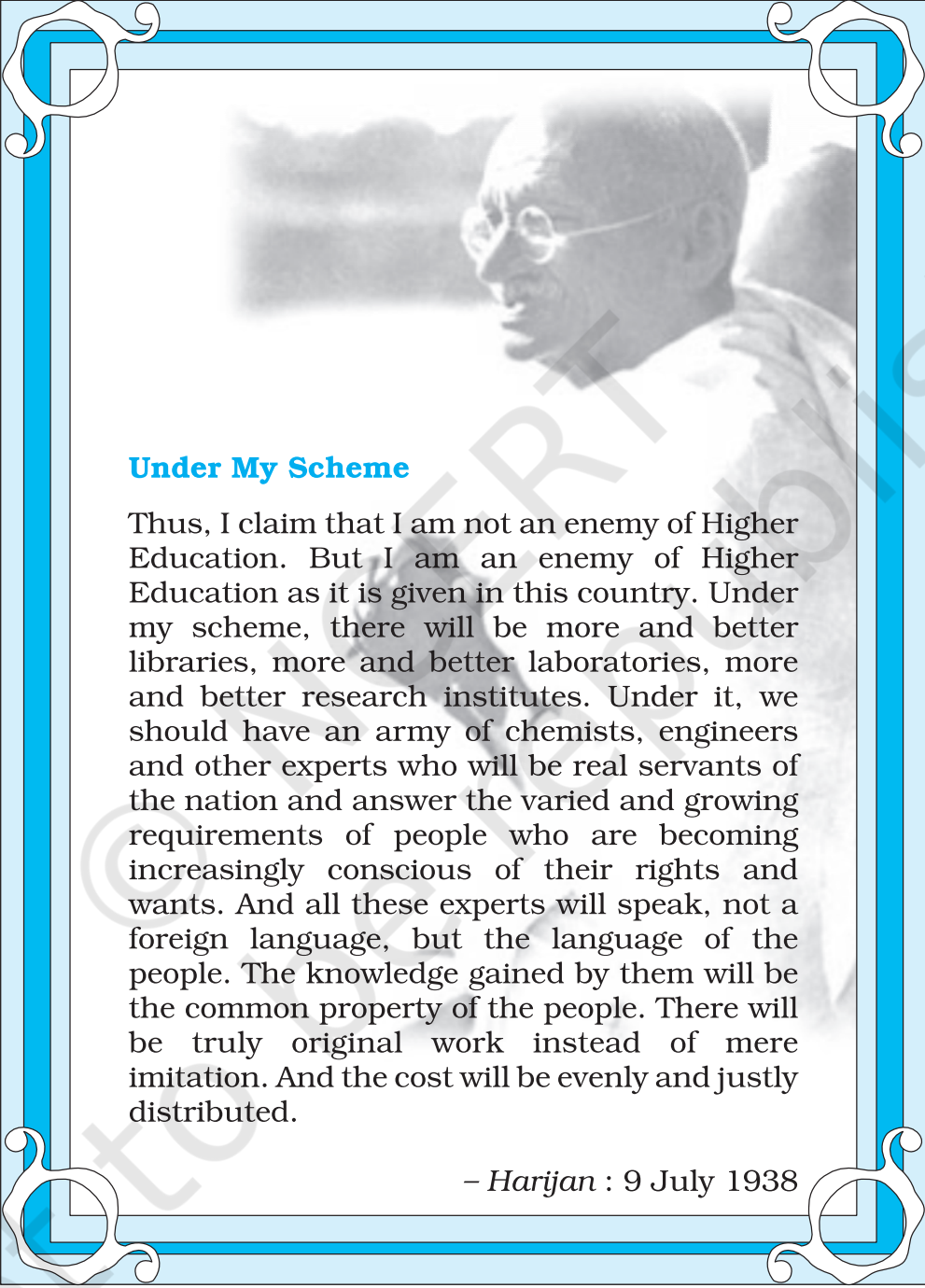
The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that, given space, time and freedom, children generate new knowledge by engaging with 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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ACKNOWLEDGEMENTS

The National Council of Educational Research and Training acknowledges the valuable contributions of the individuals and organisations involved in the development of Chemistry textbook for Class XI. It also acknowledges that some useful material from the reprint editions (2005) of Chemistry textbooks has been utilised in the development of the present textbook.

The following academics contributed effectively in editing, reviewing, refining and finalisation of the manuscript of this book: G.T. Bhandage, *Professor*, RIE, Mysuru; N. Ram, *Professor*, IIT, New Delhi; Sanjeev Kumar, *Associate Professor*, School of Science, IGNOU, Maidan Garhi, New Delhi; Shampa Bhattacharya, *Associate Professor*, Hans Raj College, Delhi; Vijay Sarda, *Associate Professor (Retd.)*, Zakir Husain College, New Delhi; K.K. Arora, *Associate Professor*, Zakir Husain College, New Delhi; Shashi Saxena, *Associate Professor*, Hans Raj College, Delhi; Anuradha Sen, Apeejay School, Sheikh Sarai, New Delhi; C. Shrinivas, *PGT*, Kendriya Vidyalaya, Pushp Vihar, New Delhi; D.L. Bharti, *PGT*, Ramjas School, Sector IV, R.K. Puram, New Delhi; Ila Sharma, *PGT*, Delhi Public School, Dwarka, Sector-B, New Delhi; Raj Lakshmi Karthikeyan, *Head (Science)*, Mother's International School, Sri Aurobindo Marg, New Delhi; Sushma Kiran Setia, *Principal*, Sarvodaya Kanya Vidyalaya, Hari Nagar (CT), New Delhi; Nidhi Chaudray, *PGT*, CRPF Public School, Rohini, Delhi; and Veena Suri, *PGT*, Bluebells School, Kailash Colony, New Delhi. We are thankful to them.

We express our gratitude to R.S. Sindhu, *Professor (Retd.)*, DESM, NCERT, New Delhi, for editing and refining the content of the textbook right from the initial stage.

We are also grateful to Ruchi Verma, *Associate Professor*, DESM, NCERT, New Delhi; Pramila Tanwar, *Assistant Professor*, DESM, NCERT, New Delhi; R.B. Pareek, *Associate Professor*, RIE, Ajmer; and A.K. Arya, *Associate Professor*, RIE, Ajmer, for refining the content of the textbook.

Special thanks are due to M. Chandra, *Professor and Head (Retd.)*, DESM, NCERT for her support.

The Council also gratefully acknowledges the contributions of Surendra Kumar, Narender Verma and Ramesh Kumar, *DTP Operators*; Subhash Saluja, Ramendra Kumar Sharma and Abhimanyu Mohanty, *Proofreaders*; Bhavna Saxena, *Copy Editor*; and Deepak Kapoor, *In-charge*, Computer Station, in shaping this book. The contributions of the Publication Department, NCERT, New Delhi, in bringing out this book are also duly acknowledged.

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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.