

Cambridge University Press
978-0-521-12661-8 - Cambridge International AS and A Level Chemistry Coursebook
Roger Norris, Lawrie Ryan and David Acaster
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**Roger Norris, Lawrie Ryan
and David Acaster**

Cambridge International AS and A Level

Chemistry

Coursebook



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CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

www.cambridge.org

Information on this title: www.cambridge.org/9780521126618

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First published 2011

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

ISBN 978-0-521-12661-8 Paperback with CD-ROM for Windows and Mac

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Introduction

Cambridge CIE AS and A Level Chemistry

This new Cambridge AS/A Level Chemistry course has been specifically written to provide a complete and precise coverage for the Cambridge International Examinations syllabus 9701. The language has been kept simple, with bullet points where appropriate, in order to improve the accessibility to all students. Principal Examiners have been involved in all aspects of this book to ensure that the content gives the best possible match to both the syllabus and to the type of questions asked in the examination.

The book is arranged in two sections. Chapters 1–17 correspond to the AS section of the course (for examination in Papers 1, 2 and 31/32). Chapters 18–30 correspond to the A level section of the course (for examinations in papers 4 and 5). Within each of these sections the material is arranged in the same sequence as the syllabus. For example in the AS section, Chapter 1 deals with atoms, molecules and stoichiometry and Chapter 2 deals with atomic structure. The A level section starts with lattice energy (Chapter 18: syllabus section 5) then progresses to redox potentials (Chapter 19: syllabus section 6).

Nearly all the written material is new, although some of the diagrams have been based on material from the endorsed *Chemistry for OCR* books 1 and 2 (Acaster and Ryan, 2008). There are separate chapters about nitrogen and sulfur (Chapter 12) and the elements and compounds of Group IV (Chapter 22), which tie in with the specific syllabus sections. Electrolysis appears in Chapter 7 and quantitative electrolysis in Chapter 19. The chapter on reaction kinetics (Chapter 21) includes material about catalysis whilst the organic chemistry section has been rewritten to accommodate the iodoform reaction and to follow the syllabus more closely. The last three chapters have been developed to focus on the applications of chemistry (Paper 4B). These chapters contain a wealth of material and questions which will help you gain confidence to maximise your potential in the examination. Important definitions are placed in boxes to highlight key concepts.

Several features of the book are designed to make learning as effective and interesting as possible.

- **Objectives** for the chapter appear at the beginning of each chapter. These relate directly to the statements in the syllabus, so you know what you should be able to do when you have completed the chapter.
 - **Important definitions** are placed in boxes to highlight key concepts.
 - **Check-up questions** appear in boxes after most short sections of text to allow you to test yourself. They often address misunderstandings that commonly appear in examination answers. The detailed answers can be found at the back of the book.
 - **Fact files** appear in boxes at various parts of the text. These are to stimulate interest or to provide extension material. They are not needed for the examination.
 - **Worked examples**, in a variety of forms, are provided in chapters involving mathematical content.
 - **Experimental chemistry** is dealt with by showing detailed instructions for key experiments, e.g. calculation of relative molecular mass, titrations, thermochemistry and rates of reaction. Examples are also given of how to process the results of these experiments.
 - A **summary** at the end of each chapter provides you with the key points of the chapter as well as key definitions.
 - **End-of-chapter questions** appear after the summary in each chapter. Many of these are new questions and so supplement those to be found on the Cambridge Students' and Teachers' websites. The answers to these questions, along with exam-style mark schemes, can be found on the CD-ROM.
 - **Examiner tips** are given with the answers to the end-of-chapter questions on the CD-ROM.
 - A full **glossary** of definitions is provided at the back of the book.
- A student CD-ROM is also provided. In addition to the summaries and glossary, this contains:
- **animations** to help develop your understanding
 - **test-yourself questions** (multiple choice) for Chapters 1–17. These are new questions and will help you with Paper 1
 - **study skills** guidance to help you direct your learning so that it is productive
 - **advice on the practical examination** to help you achieve the best results.