Pearson Edexcel

A Level Chemistry

Specification

Pearson Edexcel Level 3 Advanced GCE in Chemistry (9CH0)

First teaching from September 2015

First certification from 2017

Issue 2

Rationale

The Pearson Edexcel Level 3 Advanced GCE in Chemistry meets the following purposes, which fulfil those defined by the Office of Qualifications and Examinations Regulation (Ofqual) for GCE qualifications in their *GCE Qualification Level Conditions and Requirements* document, published in April 2014.

The purposes of this qualification are to:

- define and assess achievement of the knowledge, skills and understanding that will be needed by students planning to progress to undergraduate study at UK higher education institutions, particularly (although not only) in the same subject area
- set out a robust and internationally comparable post-16 academic course of study to develop that knowledge, skills and understanding
- enable higher education institutions to identify accurately the level of attainment of students
- provide a basis for school and college accountability measures at age 18
- provide a benchmark of academic ability for employers.

Qualification aims and objectives

The aims and objectives of the Pearson Edexcel Level 3 Advanced GCE in Chemistry are to enable students to develop:

- essential knowledge and understanding of different areas of the subject and how they relate to each other
- a deep appreciation of the skills, knowledge and understanding of scientific methods
- competence and confidence in a variety of practical, mathematical and problem-solving skills
- their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with the subject
- an understanding of how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society.

Paper 1: Advanced Inorganic and Physical Chemistry
***Paper code: 9CH0/01**

- Externally assessed
- Availability: May/June
- First assessment: 2017

30% of the total qualification

Overview of content

This paper will examine the following topics.

- Topic 1: Atomic Structure and the Periodic Table
- Topic 2: Bonding and Structure
- Topic 3: Redox I
- Topic 4: Inorganic Chemistry and the Periodic Table
- Topic 5: Formulae, Equations and Amounts of Substance
- Topic 8: Energetics I
- Topic 10: Equilibrium I
- Topic 11: Equilibrium II
- Topic 12: Acid-base Equilibria
- Topic 13: Energetics II
- Topic 14: Redox II
- Topic 15: Transition Metals

Overview of assessment

- Assessment is 1 hour 45 minutes.
- The paper consists of 90 marks.
- The paper may include multiple-choice, short open, open-response, calculations and extended writing questions.
- The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6: Mathematical skills and exemplifications*). Overall, a minimum of 20% of the marks across the three papers will be awarded for mathematics at Level 2 or above.

Paper 2: Advanced Organic and Physical Chemistry
***Paper code: 9CH0/02**

- Externally assessed
- Availability: May/June
- First assessment: 2017

30% of the total qualification

Overview of content

This paper will examine the following topics.

- Topic 2: Bonding and Structure
- Topic 3: Redox I
- Topic 5: Formulae, Equations and Amounts of Substance
- Topic 6: Organic Chemistry I
- Topic 7: Modern Analytical Techniques I
- Topic 9: Kinetics I
- Topic 16: Kinetics II
- Topic 17: Organic Chemistry II
- Topic 18: Organic Chemistry III
- Topic 19: Modern Analytical Techniques II

Overview of assessment

- Assessment is 1 hour 45 minutes.
- The paper consists of 90 marks.
- The paper may include multiple-choice, short open, open-response, calculations and extended writing questions.
- The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6: Mathematical skills and exemplifications*). Overall, a minimum of 20% of the marks across the three papers will be awarded for mathematics at Level 2 or above.

100% Exam

Paper 3: General and Practical Principles in Chemistry

***Paper code: 9CH0/03**

- Externally assessed
- Availability: May/June
- First assessment: 2017

40% of the total qualification

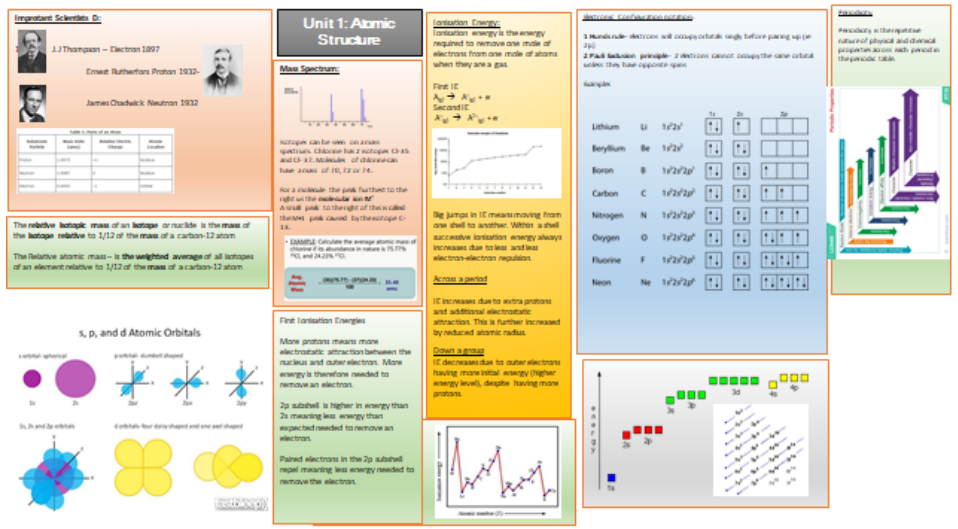
Overview of content

- Questions in this paper may draw on any of the topics in this specification.
- The paper will include synoptic questions that may draw on two or more different topics listed.
- The paper will include questions that assess conceptual and theoretical understanding of experimental methods (indirect practical skills) that will draw on students' experiences of the core practicals.

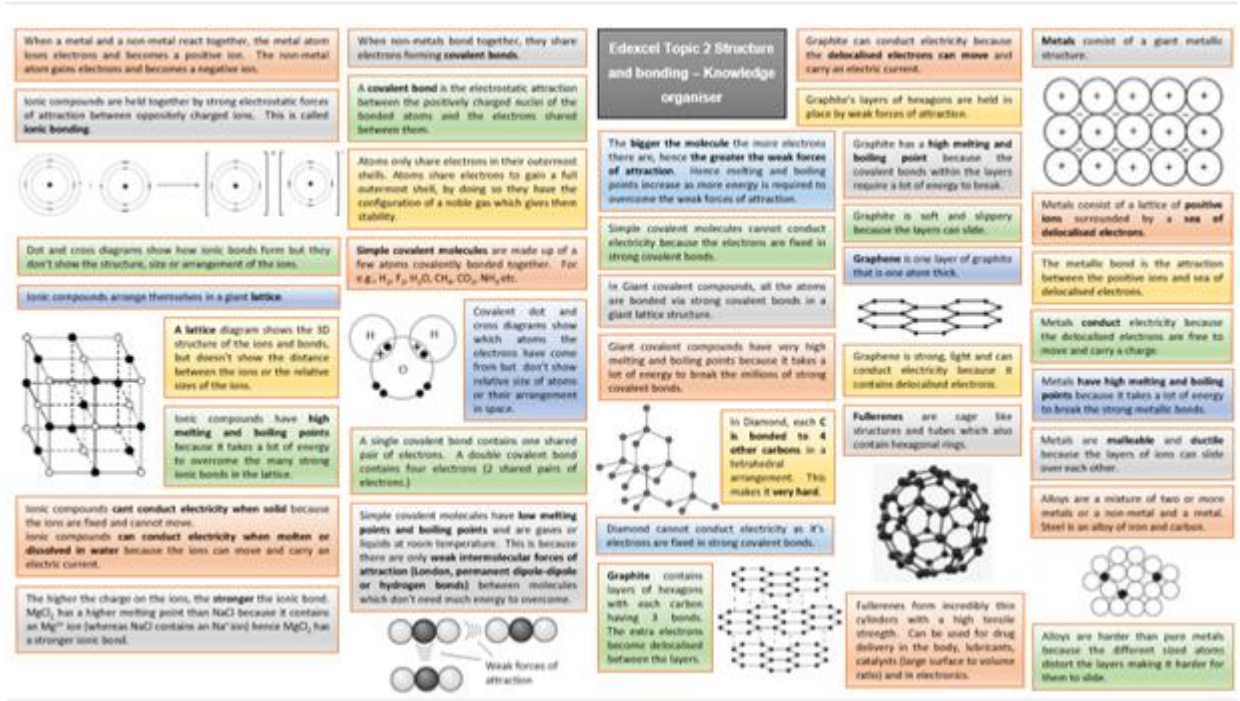
Overview of assessment

- Assessment is 2 hours 30 minutes.
- The paper consists of 120 marks.
- The paper may include short open, open-response, calculations and extended writing questions.
- The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6: Mathematical skills and exemplifications*). Overall, a minimum of 20% of the marks across the three papers will be awarded for mathematics at Level 2 or above.
- Some questions will assess conceptual and theoretical understanding of experimental methods (see *Appendix 5: Working scientifically*).

100% Exam



Knowledge Organisers
Text book
Seneca
Lab book



Science Practical Endorsement**

***Paper code: 9CH0/04**

- Internally assessed and externally monitored by Pearson.
- Availability: May/June
- First assessment: 2017

Overview of content

The assessment of practical skills is a compulsory requirement of the course of study for A level chemistry. It will appear on all students' certificates as a separately reported result, alongside the overall grade for the qualification.

Students must carry out a minimum of 12 practical activities which, together, meet the requirements of *Appendices 5b* (*Practical skills identified for direct assessment and developed through teaching and learning*) and *5c* (*Use of apparatus and techniques*) from the prescribed subject content.

The practical activities prescribed in this specification (the "core practicals") provide opportunities for demonstrating competence in all the skills identified, together with the use of apparatus and techniques for each subject. However, students can also demonstrate these competencies in any additional practical activity undertaken throughout the course of study which covers the requirements of *Appendix 5c*.

Overview of assessment

Students' practical work will be assessed by teachers, using common practical assessment criteria (CPAC) that are consistent across exam boards. These criteria can be found on pages 48–49.

Students who demonstrate the required standard across all the requirements of the CPAC will receive a 'pass' grade.

Students may work in groups but teachers who award a pass to their students need to be confident of individual students' competence.

The correct application of CPAC to students' work will be monitored through a system of visits to centres. These visits will be coordinated across the exam boards by JCQ, to ensure that all centres are visited regularly, although not necessarily in each science subject.

Practical work and standard lab techniques are important.