



GCSE EXAMINERS' REPORTS

SCIENCE - CHEMISTRY

JANUARY 2018

Grade boundary information for this subject is available on the WJEC public website at:
<https://www.wjecservices.co.uk/MarkToUMS/default.aspx?!=en>

Online results analysis

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Annual Statistical Report

The annual Statistical Report (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

Unit	Page
Chemistry 1 Foundation	1
Chemistry 1 Higher	2
Chemistry 2 Foundation	3
Chemistry 2 Higher	4
Chemistry 3 Foundation	5
Science A Controlled Assessments	6
Additional Science & separate science assessment	7

SCIENCE - CHEMISTRY
General Certificate of Secondary Education
January 2018
CHEMISTRY 1 - FOUNDATION

Five candidates sat the Foundation Tier paper in the final session for this unit. The paper was of a similar level of demand to those set in previous years.

The majority showed good basic knowledge of the properties of metals [Q1(a)] and the movement of tectonic plates [Q3(b)]. They also showed good graph-plotting skills [Q6(a)]. Most candidates were unable to write chemical formulae for ionic compounds [Q1(b), Q6(a)] and showed surprisingly poor knowledge of environmental concerns relating to the burning of hydrocarbons and the issue of waste plastic [Q2(d)]. The QWC question on elements, compounds and mixtures [Q8] was poorly answered.

SCIENCE - CHEMISTRY
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January 2018
CHEMISTRY 1 - HIGHER

Ten candidates sat the Higher Tier paper in the final session for this unit. The paper was of a similar level of demand to those set in previous years.

Most candidates showed good knowledge of the properties of elements [Q4(a)] and of the development of the theory of plate tectonics [Q5]. Some produced a good account of the relative benefits of coal and hydrogen as fuels in the QWC question [Q8]. Knowledge of electrolysis [Q2] and application of the reactivity series in the context of metal extraction [Q7(a)] was often poor.

SCIENCE - CHEMISTRY
General Certificate of Secondary Education
January 2018
CHEMISTRY 2 - FOUNDATION

Seven candidates sat the Foundation Tier paper in the final session for this unit. The paper was of a similar level of demand to those set in previous years.

The majority showed good knowledge of structure types [Q2], hard water [Q3] and the names and formulae of simple hydrocarbons [6(a)]. Explanation of fractional distillation [Q8] was disappointing. Chemical formulae [Q5, Q7(b)] were not well done by most candidates and many did not attempt the percentage by mass calculation [Q6(b)]. The QWC question on chromatography [Q9] highlighted an area where understanding was surprisingly poor.

SCIENCE - CHEMISTRY

General Certificate of Secondary Education

January 2018

CHEMISTRY 2 - HIGHER

Nine candidates sat the Higher Tier paper in the final session for this unit. The paper was of a similar level of demand to those set in previous years.

Most candidates showed a good understanding of ionic bonding [Q6(c)] and of particle theory in explaining the effect of temperature on reaction rate [Q7(a)]. Higher level understanding of properties, bonding and structure [Q5, Q8(b)] was disappointing. Some candidates made no attempt at calculations on reacting masses [Q6(b)] and simplest formula [Q6(d)] whilst others had no difficulty whatsoever. The QWC question on addition reactions was poorly answered by the majority.

SCIENCE - CHEMISTRY
General Certificate of Secondary Education
January 2018
CHEMISTRY 3 - HIGHER

Five candidates sat the Higher Tier paper in the final session for this unit. The paper was of a similar level of demand to that set in previous years.

All candidates were able to draw structural isomers of the given hydrocarbon [Q4(a)] but not one named the isomeric alcohols correctly [Q4(b)]. The majority showed at least some degree of competence in a percentage yield calculation [Q5(c)] and/or in volumetric analysis [Q6]. Some made basic errors in writing and balancing chemical equations [Q2(b), Q4(d), Q5(b)]. Candidates at this level generally show good understanding of ion tests but marks proved to be disappointing when tested in context in the QWC question [Q7].

SCIENCE - CHEMISTRY

General Certificate of Secondary Education

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SCIENCE A CONTROLLED ASSESSMENTS

OVERVIEW

The number of entries for this award was extremely low, making it very difficult to draw generalisations and conclusions about performance.

ADMINISTRATION AND MARKING

Samples were submitted on time and were well organised. The marking was generally of an acceptable standard, although, as in the past, there was a tendency towards generosity.

PUPIL PERFORMANCE

The small numbers involved preclude any overall comment on pupil performance.

RESEARCH EXERCISE – GENERAL ISSUES

The main issue in the research task were that the descriptions of investigations in part two were generally much too vague. The candidates did not have a clear understanding of the concept of strength of evidence.

PRACTICAL AND SAFETY EXERCISE – GENERAL ISSUES

There were no general issues with either of these exercises.

SCIENCE - CHEMISTRY

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ADDITIONAL SCIENCE & SEPARATE SCIENCES CONTROLLED ASSESSMENTS

OVERVIEW

The number of entries for this award was extremely low, especially in the separate sciences, making it very difficult to draw generalisations and conclusions about performance. In additional science, the majority of the candidates did the enzyme practical.

ADMINISTRATION AND MARKING

Samples were submitted on time and were well organised. The marking was generally of an acceptable standard, although, as in the past, there was a tendency towards generosity.

PUPIL PERFORMANCE

The small numbers involved preclude any overall comment on pupil performance.

BIOLOGY EXERCISE

Most candidates investigated starch concentration. Performance was generally of quite a high standard, and the only issue revolved around the risk assessment, with a number of candidates unsure of the distinction between hazards and risks. This applied not only to this exercise, but also to the chemistry and physics exercises.

CHEMISTRY EXERCISES

Performance was generally quite good, with no issues other than the one of risk assessments mentioned above.

PHYSICS EXERCISES

Performance was generally quite good, with no issues other than the one of risk assessments mentioned above.



WJEC
245 Western Avenue
Cardiff CF5 2YX
Tel No 029 2026 5000
Fax 029 2057 5994
E-mail: exams@wjec.co.uk
website: www.wjec.co.uk