

Examiners' Report

Summer 2013

GCSE Chemistry (6CH06) Paper 1A/1B
Chemistry Laboratory Skills II

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Grade Boundaries

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6CH06/1A

General

This was the fourth year that the component has been examined. Most centres have built up expertise in its implementation and administration and prepare their candidates well for the assessment tasks. High marks are common. In some centres all candidates score maximum or near maximum marks. Even after four years, however, and in spite of repeated feedback, there remain some centres that fail to send the correct sample of work to the moderator and do not include teachers' or expected values with the sample.

Centre assessors are advised to read this report and the equivalent one for 6CH03/1A.

Comments on the administration of the scheme

- The sample sent to the moderator should include the work of those candidates selected by Edexcel plus that of the highest and lowest scoring candidates if these are not already included. Only the record sheets for these candidates need be sent to the moderator. The record sheets of other students are not required.
- There continues to be a small number of centres that fail to send teacher's values for the activity c tasks, A2C1 and A2C3. Moderators cannot check the award of accuracy marks without these values. It is most helpful when the values are annotated on the work for those candidates in the sample.
- An E9 feedback form, completed by the moderator, is sent to every centre. Sometimes there are comments on the E9 pointing out any shortcomings by the centre in its implementation of the scheme. Centre assessors should note these comments and take appropriate action when running the scheme in 2013-2014.

Assessments

Activity a(GPC)

The five core practicals must include at least one each of an organic, a physical and an inorganic experiment. Few candidates failed to satisfy this requirement.

Activity b Qualitative observation

The four tasks available in 2012-2013 are no longer valid and must not be used for assessment of this activity in 2013-2014. Four replacement tasks, A2B17-ASB20, are to be found on the secure web site.

- Generally the marking of these tasks was accurate with teachers interpreting the mark schemes correctly. When student's observations

do not quite match those in the marks scheme but are confirmed by the teacher, then these may be given credit. It is helpful if the teacher annotates the work to explain the marking in these cases.

- There were a number of questions in which a mis-reading of what was being asked led to the loss of fairly easy marks. In A2B13(c)(iv) iodine was sometimes given even though an anion was asked for.
- Some candidates failed to score both marks in A2B14(c)(ii) since they were unable to give the correct oxidation numbers of copper after KI had been added.
- When PCl_5 is used to test for an alcohol or carboxylic acid the expected observation is that misty or steamy fumes are given off. However it is allowed to award a mark for effervescence since this may be interpreted as evidence of a vigorous reaction.
- Candidates should be clear about the differences between molecular formula, structural and displayed formulae. In A2B15(b)(i) even though they were asked to write $\text{C}_3\text{H}_8\text{O}$ for the molecular formula structural and displayed formulae were frequently given instead.

Activity c Quantitative measurement

- In the three tasks where a graph is drawn teachers are expected to check that the points are accurately plotted yet moderators find that, frequently, this has not been done. This may lead to lost marks for the candidate. For example, in A2C1, if the candidate has made an error on reading off the volume from the pH curve teachers may correct the reading before awarding accuracy marks.
- Some teachers do not seem to be aware that the mark scheme for titrations is followed by detailed notes giving further details on its implementation. In particular the notes explain how to mark the weighings and burette volumes tables when candidates fail to record data to the expected number of decimal points.
- In A2C4 candidates often lost marks in Table 1 by a failure to round off the data accurately. For example $1/\text{time}$ calculated as 0.04378 was rounded to 0.043 rather than 0.044. In this task the activation energy calculated in (d) must have had a positive sign to score the second mark.

Activity d Preparation

The most popular preparation is A2D2. This relatively straight-forward preparation gives a high yield of product. Of the two organic preparations the most popular is A2D3. Teachers should encourage candidates to thoroughly dry their product. This year a number of yields above 100% were seen by moderators.

Multi-stage activity

A2M1 A small number of centres took the opportunity to assess their

candidates using this extended task. Within a centre it is allowed for some candidates to submit this task and for others to use separate c and d tasks as part of their mark profile.

Summary

As ever moderators would like to thank centre assessors, candidates and technicians for their part in the implementation of the 6CH06 internal assessment scheme.. Centre assessors must make absolutely sure that they are using the correct assessment tasks for 2013-2014. These are posted on the Edexcel Chemistry website from September, 2013.

6CH06/1B

General

This was the fourth year that the component has been examined. Some centres have built up expertise in its implementation and administration and prepare their candidates well for the assessment tasks. High marks are common and in some centres many candidates score maximum or near maximum marks.

However, even after four years, and in spite of repeated feedback, there remain some centres that fail to send the correct work to the examiner and do not include teachers' values with the sample.

Teachers entering candidates for this component in 2014 are advised to read this report and the equivalent one for 6CH03/1B.

Comments on the administration of the scheme

Some comments made in the 6CH03/1B report also apply to this scheme.

- Even though candidates may have completed two or more tasks for each activity only the work for one of each activity must be sent to the examiner. It is up to teachers to choose which tasks to include for marking. The examiner is not expected to mark two or more tasks for each activity then select the higher mark.
- As has been stated in all three of these previous reports it is vital that a completed Teacher's Values Form is included with the work sent to the examiner if candidates are submitting an activity c task in which accuracy marks are awarded by comparing a candidate's value with an expected value. Without this examiners cannot award accuracy marks.

Assessments

Activity a(GPC)

The five core practicals must include at least one each of an organic, a physical and an inorganic experiment. Few candidates failed to satisfy this requirement.

Activity b Qualitative observation

The four tasks available in 2012-2013 are no longer valid and must not be used for assessment of this activity in 2013-2014. Four replacement tasks, A2B17-ASB20, are to be found on the secure web site.

- There were a number of questions in which a mis-reading of what was being asked led to the loss of fairly easy marks. In A2B13(c)(iv) iodine was sometimes given even though an anion was asked for.

- Some candidates failed to score both marks in A2B14(c)(ii) since they were unable to give the correct oxidation numbers of copper after KI had been added.
- When PCl_5 is used to test for an alcohol or carboxylic acid the expected observation is that misty or steamy fumes are given off. However it is allowed to award a mark for effervescence since this may be interpreted as evidence of a vigorous reaction.
- Candidates should be clear about the differences between molecular formula, structural and displayed formulae. In A2B15(b)(i) even though they were asked to write $\text{C}_3\text{H}_8\text{O}$ for the molecular formula, structural and displayed formulae were frequently given instead.

Activity c Quantitative measurement

- Some teachers do not seem to be aware that the mark scheme for titrations is followed by detailed notes giving further details on its implementation. In particular the notes explain how to mark the weighings and burette volumes tables when candidates fail to record data to the expected number of decimal points. These notes provide a useful guide as to what is expected by the examiners when marking titrations.
- In A2C4 candidates often lose marks in Table 1 by a failure to round off the data accurately. For example a $1/\text{time}$ calculated as 0.04378 was rounded to 0.043 rather than 0.044. In this task the activation energy calculated in (d) must have a positive sign to score the second mark.
- Examiners do check that the points on a graph are correctly plotted. Often they find that at least one point is mis-plotted sometimes due to the scale being over-complicated.

Activity d Preparation

A2D1 This preparation continues to give high marks for candidates. Generally errors in the calculation of the maximum mass in (a) were corrected by centre assessors before the marks for yield were awarded in (b).

A2D2 This straight-forward and successful preparation continues to give high scores.

A2D3 This is the more popular of the two organic preparations giving good yields of crystals.

Summary

The examiners thank teachers, candidates and technicians for their part in the implementation of the 6CH06 assessment scheme.. Centre assessors must make absolutely sure that they are using the correct assessment tasks for 2013-2014. These are posted on the Edexcel Chemistry website from September, 2013.

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