

Moderators' Report/
Principal Moderator Feedback

Summer 2014

Pearson Edexcel GCE
Chemistry (6CH06) Papers 1A/1B
Chemistry Laboratory Skills

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Summer 2014

Publications Code UA038331

All the material in this publication is copyright

© Pearson Education Ltd 2014

6CH06 1A

General Comments

With the scheme in its fifth year most centres have built up expertise in its implementation and administration. Candidates are well prepared for the assessment tasks. High marks are common and well deserved. In some centres almost all the entry scores maximum or near maximum marks. The moderators saw few marks below 30.

Even though the scheme is well established, however there are some centres that fail to send the correct sample of work to the moderator and do not include teacher's or expected values with the sample. Some teachers do not apply the mark scheme rigorously enough.

All centre assessors are advised to read this report and the equivalent one for 6CH03.01A then to implement any changes to their delivery of the scheme that may be necessary.

Comments on the administration of the scheme

- When moderators receive a sample from a centre they first check that it includes the work requested by Edexcel plus that of the highest and lowest scoring candidates if these are not already included. If some of this work is missing then the moderator has to contact the centre to ask for more work to be sent.
- Only the record sheets for those candidates in the sample need be sent to the moderator. The record sheets of other students are not required. When work is returned to home centres in late July the record sheets are retained by the moderator.
- In order to check the award of accuracy marks in c tasks moderators must be supplied with teacher's values for titres, masses and volumes. It is most helpful to the moderator if centres record these on the Edexcel Teacher's Values form. In addition teachers should annotate work to show expected values and differences between these and the candidate's own value.
- 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 2014-2015.
- Centre assessors should be aware of the change to the scheme for 2014-2015.

All the assessment tasks are new and are numbered A2B21-A2B24, A2C5-A2C8, A2D4-A2D6 and A2M2. The new tasks will be on the secure Edexcel website from September, 2014.

Assessments

Activity a(GPC)

Centres now understand that what is required on the record sheet is to list five core practicals along with their dates. At least one physical, inorganic and organic task must be included.

Activity b Qualitative observation

The four tasks available in 2013-2014 are no longer valid and must not be used for assessment of this activity in 2014-2015. Four replacement tasks, A2B21-A2B24, are on the secure web site.

- The exercises worked well with most candidates recording the expected observations and making the correct inferences. Generally teachers applied the mark schemes correctly. An exception to this was in the marking of explanations when interpreting the spectra in A2B19 and A2B20. In A2B19(a)(iv) the second mark should only have been awarded if the $(n+1)$ rule was included in the explanation.
- Candidates should understand the significance of the instruction to add a reagent "until no further change occurs". In A2B17(a)(ii) when ammonia was added to the solution of iron(III) chloride most candidates correctly observed a brown precipitate. They should have continued to add ammonia and then to have recorded that the precipitate is insoluble in excess.
- The silver mirror test in A2B20(b)(ii) failed to give a silver mirror for some candidates. However most did record a black deposit or precipitate and this observation should have been awarded both marks.
- When PCl_5 is added to an alcohol or carboxylic acid "effervescence" may score a mark as "evidence of vigorous reaction".

Activity c Quantitative measurement

The four tasks available in 2013-2014 are no longer valid and must not be used for assessment of this activity in 2014-2015. Four replacement tasks, A2C5-A2C8, are on the secure web site

- In the tasks where a graph is drawn teachers are expected to check that the points are accurately plotted. The moderators find, however, that, quite frequently, this has not been done. In A2C4 an error in the graph will affect the value of the gradient and the calculated activation energy resulting in a possible loss of accuracy marks.
- The mark schemes for a titration is followed by a page of detailed notes giving further details on its implementation. 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. This point is sometimes a cause of marking error by teachers.
- Rounding and significant figure mistakes continue to be a cause of lost marks by candidates.

Activity d Preparation

The most popular preparation was, again, 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.

The activity d tasks available in 2014-2015 are A2D4-A2D6.

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.

For 2014-2015 a new multi-stage activity, A2M2, is available.

Summary

As ever moderators 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 2014-2015. These are posted on the Edexcel Chemistry website from September, 2014.

6CH06 1B

General Comments

With the scheme in its fifth year most centres have built up expertise in its implementation and administration. Most candidates are well prepared for the assessment tasks. High marks are common and well deserved.

Even though the scheme is well established, however, there are some centres that still fail to include teacher's values for the c tasks.

All teachers are advised to read this report and the equivalent one for 6CH03.01B then to implement any changes to their delivery of the scheme that may be necessary.

Comments on the administration of the scheme

- In order to award accuracy marks in c tasks examiners must be supplied with teacher's values for titres, masses and volumes. These should be entered on an Edexcel Teacher's Values form and sent to the examiner. It is not enough for those teachers who mark the work before it is sent to the examiner to simply enter their marks for accuracy of the work.
- There is no requirement for teachers to mark the assessment tasks although they often do so in order to decide which tasks are the highest scoring ones. It is helpful to the examiners and may avoid confusion for script checkers if this marking is carried out in pencil and not in red ink. Even if they have marked the work teachers should not enter marks on the record sheet.
- Centre assessors should be aware of the change to the scheme for 2014-2015.

All the assessment tasks are new and are numbered A2B21-A2B24, A2C5-A2C8, A2D4-A2D6 and A2M2. The new tasks will be on the secure Edexcel website from September, 2014.

Assessments

Activity a(GPC)

Centres now understand that what is required on the record sheet is to list five core practicals along with their dates. At least one physical, inorganic and organic task must be included.

Activity b Qualitative observation

The four tasks available in 2013-2014 are no longer valid and must not be used for assessment of this activity in 2014-2015. Four replacement tasks, A2B21-A2B24, are on the secure web site.

- The exercises worked well with most candidates recording the expected observations and making the correct inferences. Generally teachers applied the mark schemes correctly. An exception to this was in the marking of explanations when interpreting the spectra in A2B19 and A2B20. In A2B19(a)(iv) the second mark should only have been awarded if the $(n+1)$ rule was included in the explanation.
- Candidates should understand the significance of the instruction to add a reagent "until no further change occurs". In A2B17(a)(ii) when ammonia was added to the solution of iron(III) chloride most candidates correctly observed a brown precipitate. They should have continued to add ammonia and then to have recorded that the precipitate is insoluble in excess.
- The silver mirror test in A2B20(b)(ii) failed to give a silver mirror for some candidates. However most did record a black deposit or precipitate and this observation should have been awarded both marks.
- When PCl_5 is added to an alcohol or carboxylic acid "effervescence" may score a mark as "evidence of vigorous reaction".

Activity c Quantitative measurement

The four tasks available in 2013-2014 are no longer valid and must not be used for assessment of this activity in 2014-2015. Four replacement tasks, A2C5-A2C8, are on the secure web site.

- In the tasks where a graph is drawn teachers are expected to check that the points are accurately plotted. The moderators find, however, that, quite frequently, this has not been done. In A2C4 an error in the graph will affect the value of the gradient and the calculated activation energy resulting in a possible loss of accuracy marks.
- The mark scheme for a titration is followed by a page of detailed notes giving further details on its implementation. 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. This point is sometimes a cause of marking error by teachers.
- Rounding and significant figure mistakes continue to be a cause of lost marks by candidates.

Activity d Preparation

The most popular preparation was, again, 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.

The activity d tasks available in 2014-2015 are A2D4-A2D6.

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.

For 2014-2015 a new multi-stage activity, A2M2, is available.

Summary

As ever examiners thank teachers, 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 2014-2015. These are posted on the Edexcel Chemistry website from September, 2014.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

