Moderators' Report/
Principal Moderator Feedback

Summer 2016

Pearson Edexcel GCE
in Chemistry (6CH03_1A/1B)
Chemistry Laboratory Skills I

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6CH03.01A (Coursework) Summer 2016

General

The assessment scheme was first available to centres in summer, 2009. Most centres have been entering their students for the scheme since the start so are well used to its administration and procedures. For the majority of centres assessments are carried out and marked as intended. For these centres moderation is a fairly routine task. However, even at this late stage in the life of the scheme, a few centres failed to follow all the procedures correctly. In some cases the sample of work sent to the moderator was incomplete or badly organised. Marking was sometimes too generous with teachers failing to apply the mark scheme rigorously enough.

Centres will receive an E9 feedback report. Teachers should carefully note any shortcomings noted in the report.

Comments on the administration of the scheme

- For 2015-2016 all of the assessment tasks were new. This year no centres submitted tasks set for earlier years
- The administration and implementation of the scheme remained unchanged.
- Those students re-sitting Unit 6CH03_1A completed new tasks for each of activity b, c and d.
- Some candidates failed to complete record sheets with their names and numbers. Centre and candidate numbers should have been checked by centre assessors if they had been completed by the candidate since the moderators commonly found errors in this information.
- The sample of work sent to the moderator should have included that of the highest and lowest scoring candidate in the centre. Moderators often had to contact centres to request this work when it was omitted from the sample.
- All of the mark schemes for the c tasks included accuracy marks. The award of these could be checked by the moderator only if teacher values were included with the sample of work. It was acceptable for the teacher to annotate the c task by writing the expected value of titre or temperature change on the work.
- All of the candidates in a centre, even if they are in different teaching groups, should have had their work marked in an identical way. Any mark adjustments are made to the whole entry from a centre. For this reason internal standardisation should always be carried out. The moderator needed to see evidence of this moderation.

Assessments

Activity a(GPC)

This year there were no significant issues regarding the listing of the five tasks on record sheets. A range of laboratory activities is listed on record sheets. Providing at least one each of a physical, an inorganic and an organic experiment is included in the five tasks listed then the moderators do not comment on this part of the record sheet.

Activity b Qualitative observation

The four tasks available in 2015-2016 were ASB29-ASB32.

- In ASB29(d)(ii), when aqueous chlorine was added to the solution of potassium iodide, **C**, it was expected that a brown solution of iodine would be observed. When hexane was added to this solution the organic layer should have been recorded as being a purple or violet colour as the iodine moved into the hexane layer.
- In ASB30(c)(ii) as concentrated sulfuric acid was added to potassium bromide, **E**, a brown or orange vapour was given off. This should have been identified as bromine in (c)(iii)
- In ASB31(a)(ii) a mark was awarded for the observation that layers are formed when the bromine water was added. If the mark was not awarded in this part then it could be scored in part (a)(iii).
- In ASB32(a)(vi) the expected functional group was aldehyde rather than carbonyl.
- The b tasks set for 2015-2016 are no longer secure and may be used as practice exercises.

Activity c Quantitative measurement

Some issues referred to in previous 6CH03 reports remain to be addressed by centres.

- The treatment of significant figures when giving answers to the calculations showed an improvement this year. In particular answers in ASC10 and ASC11 were usually given to the three significant figures required.
- It is helpful to the moderator if the expected value of titre or temperature is written on the work close to the candidate's value and the difference shown. In addition the moderator finds it very useful to have a completed Teacher's Values form so that he or she may check the award of accuracy marks.
- The energetics task ASC12 was more popular then ASC13 and gave the expected temperature changes for very many candidates.

Activity d Preparation

As in previous years this activity gave the highest proportion of the maximum mark for many candidates.

- Candidates are allowed to work in pairs for this activity. It is a condition of the scheme, however, that the questions are answered individually. It is useful to the moderators if candidates write the name of their partner in the preparation on their work.
- The two salt preparations, ASD8 and ASD9, were much more popular with centres than the organic task, ASD10. In both salt preparations many candidates made reasonable attempts to draw the shape of the crystals.
- ASD10 was an amended procedure to prepare an aqueous solution of ethanal using dilute, rather than concentrated, sulfuric acid. The method worked well for the centres that chose to set this task.

The d tasks set for 2015-2016 are no longer secure and may be used as a teaching resource.

Summary

The moderators thank centre assessors, candidates and technicians for their part in the implementation of the internal assessment scheme in this and in earlier years.

6CH03.01B (Coursework) **Summer 2016**

General

The marking and standardisation of the assessment tasks for this component are marked using the same mark schemes and standardising materials as the internally assessed 6CH03_1A option. The grade boundaries for each component are the same.

The assessment tasks, which were all new for 2015-2016 are the same as those for 6CH03_01A. Tasks for previous years were not valid and would not have been accepted by the examiners. In fact, all centres used only the new tasks so this was not an issue this year.

Even though the scheme is now established some centres still failed to implement all the procedures needed to operate the scheme rigorously and fairly. The examiners, as ever, made every effort to overcome any omissions on the part of the centre so that their candidates were not unfairly penalised.

Comments on the administration of the scheme

- For 2015-2016 all of the assessment tasks were new. This year no centres submitted tasks set for earlier years
- The administration and implementation of the scheme remain unchanged.
- Those students re-sitting Unit 6CH03_1A completed new tasks for each of activity b, c and d.
- Some candidates failed to complete record sheets with their names and numbers.
- All of the mark schemes for the c tasks include accuracy marks. These may only be awarded by the examiner if the centre includes teacher values with the scripts. These should be recorded on the Teacher's Values form.
- Although there is no requirement for teachers to mark the work they often do so before sending the scripts to the examiner. It was helpful to the examiners when this centre marking was 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.

Assessments

Activity a(GPC)

This year there were no significant issues regarding the listing of the five tasks on record sheets. A range of laboratory activities was listed on record sheets. Providing at least one each of a physical, an inorganic and an organic experiment is included in the five tasks listed then the candidate has fulfilled the requirements of the scheme.

Activity b Qualitative observation

The four tasks available in 2015-2016 were ASB29-ASB32.

- In ASB29(d)(ii), when aqueous chlorine was added to the solution of potassium iodide, **C**, it was expected that a brown solution of iodine would be observed. When hexane was added to this solution the organic layer should have been recorded as being a purple or violet colour as the iodine moved into the hexane layer.
- In ASB30(c)(ii) as concentrated sulfuric acid was added to potassium bromide, **E**, a brown or orange vapour was given off. This should have been identified as bromine in (c)(iii)
- In ASB31(a)(ii) a mark was awarded for the observation that layers are formed when the bromine water was added. If the mark was not awarded in this part then it could be scored in part (a)(iii).
- In ASB32(a)(vi) the expected functional group was aldehyde rather than carbonyl.
- The b tasks set for 2015-2016 are no longer secure and may be used as practice exercises or as any other teaching resource.

Activity c Quantitative measurement

- The treatment of significant figures when giving answers to the calculations showed an improvement this year. In particular answers in ASC10 and ASC11 were usually given to the three significant figures required.
- The energetics task ASC12 was more popular then ASC13 and gave the expected temperature changes for very many candidates.
- ASC13 is a well tried and tested exercise that gave high marks for most of the candidates who submitted it as a counting task. In part (g), however, the second mark was sometimes lost when candidates failed to explain that once the neutralisation has finished the added sodium hydroxide solution cools down the reaction mixture.

Activity d Preparation

As in previous years this activity gave the highest proportion of the maximum mark for many candidates.

- Candidates are allowed to work in pairs for this activity. It is a condition of the scheme, however, that the questions are answered individually. It is useful to the examiners if candidates write the name of their partner in the preparation on their work.
- The two salt preparations, ASD8 and ASD9, were much more popular with centres than the organic task, ASD10. In both salt preparations many candidates made reasonable attempts to draw the shape of the crystals.
- ASD10 was an amended procedure to prepare an aqueous solution of ethanal using dilute, rather than concentrated, sulfuric acid. The method worked well for the centres that chose to set this task. The questions were generally well answered.

The d tasks set for 2015-2016 are no longer secure and may be used as a teaching resource.

Summary

The examiners thank centre assessors, candidates and technicians for their part in the implementation of the assessment scheme in this and in earlier years.

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