

General comment: No question was very well answered (i.e. questions in which a high average mark was obtained), and my comments should be read against this background.

QUESTIONS 1-4

These questions were meant to benefit the weaker candidates. Although very weak candidates obtained a better percentage here than in the other questions (due to the fact that you have the chance of guessing correctly), they were not answered as well as anticipated. The language barrier for second/third language speakers is less of a problem in these questions.

QUESTION 5

Candidates who had a proper knowledge of organic chemistry managed to answer well, with the exception of Q5.6 and Q5.7. Only a few candidates could answer these two subquestions.

QUESTION 6

Many candidates did not know the colour of bromine or iodine, which is prior knowledge from Grade 10. It is important that teachers should realize that the NCS has an integrated approach, and that if proper teaching does not take place in Grades 10 and 11, it may ultimately show in Grade 12.

As a result of the difficulty setting a fair memorandum for this kind of question, many candidates undeservingly obtained marks here.

Many learners lost marks for writing down incomplete answers.

QUESTION 7

As in Q5, candidates with an adequate knowledge of organic chemistry answered this question well, with the exception of Q7.5, which required knowledge of acids (prior knowledge from Grade 11).

QUESTION 8

Q8.1 was basically a easy question recall question, but it was answered poorly.

Q8.2 was basically the same kind of question, but answered much better. For a possible reason see Question 9 below.

QUESTION 9

Q9.1: The fact that candidates did not do well in this sub-question, was due to a lack of basic comprehension and because they write incomplete answers. The question asked for negative and positive impacts of the Haber process, but candidates were required to answer e.g.: "The process has led to the production of fertilisers to ensure enough food production." Only writing "The process has led to the production of fertilisers" did not earn a mark.

Q9.2, Q9.3 and Q9.4 were answered reasonably well.

Q9.5, although it is a difficult question, was answered very well, probably one of the best answered sub-questions in the paper.

I believe that question 8.1 and question 9.5 shows an important aspect of the status of our teaching of the subject at the moment:

Q9.5 (difficult but well answered) is from the content also taught in the old curriculum, Q8.1 (recall, but badly answered) is new content.

I am of the opinion while much training was provided for understanding the principles and learning outcomes, teachers were not adequately trained with respect to the new CONTENT addressed in the NCS. In a subject like Physical Sciences, with the content being very specialised, and with many teachers who were for instance trained in Life Sciences rather than Physical Sciences, this is a serious problem that should be addressed.

QUESTION 10

Q10.1 was answered reasonable well, but many candidates struggled with the application of the principles in Q10.2

The alternative for the redox half reactions has been given for many years. The learners are still unable to answer this correctly

QUESTION 11

For well taught candidates this question should mostly be a simple recall question, but it was answered much worse than expected. Once again it is new content, which may explain this.

Q11.6 proved to be very difficult to mark, as there are so many possible answers to the question that one has doubts about the sensibility of asking this kind of question.

QUESTION 12

Q12.1 was answered well, as would be expected from a question that is basically recall.

In Q12.2 and Q12.4 candidates had problems in formulating their answers in the way the memorandum required, while many gave perfectly correct answers that could not be awarded marks, due to the limitations of the memorandum.

Q12.3 was answered very badly, probably because candidates struggled to understand the flow diagram, which could have been clearer.