



2022 revision support for learners: Higher Chemistry

Guidance for the 2022 exam

You can use the following information to help you plan your revision and prepare for the 2022 Higher Chemistry exam.

Reading questions

Take your time in the exam when you are reading the questions. Read all parts of each question carefully. Make sure you do not miss important pieces of information and that your answers relate to what you are being asked.

Remember that information is not always in written form. It can be given in diagrams or laid out in tables, for example in an experiment report extract.

You can highlight or underline key words in the question if it helps you to focus your answer. Remember that you may not need the information given at the start of a question until a later part.

Your answers must be clear. Take care not to include information that is irrelevant or chemically incorrect.

You will not gain full marks for a correct answer if you:

- ◆ give an extra, incorrect answer
- ◆ include additional information that contradicts the correct response
- ◆ use incorrect spelling or if careless handwriting changes the meaning of your response, for example mistakes in the endings of compound names -ane, -ene or -one

Calculations

You must be familiar with the different types of chemical calculations covered in the course and with numerical calculations set in a chemical context.

You can find the relationships you are expected to use in these calculations on page 4 of the [Higher and Advanced Higher Chemistry Data Booklet](#).

In all calculations worth more than 1 mark, you will receive credit for correctly demonstrating chemical concepts or for intermediate results in a multi-step calculation. Always show your working clearly to maximise your chances of obtaining partial marks.

If a unit is provided in a question, it is not necessary to state the unit with your answer. However, if you do give a unit, it must be correct.

For calculations where you need to provide units, you should practise converting units. Remember there is a table of SI prefixes and multiplication factors on page 20 of the [Higher and Advanced Higher Chemistry Data Booklet](#) that you may find helpful.

Definitions and explanations

You must be able to accurately recall and use statements from the Higher Chemistry course.

You must be able to accurately describe and explain chemistry definitions and chemical terms from the Higher Chemistry course. You must also be able to describe chemical tests, processes, and chemical reactions using appropriate terminology. Remember, if you are asked for a chemical test, you need to give the test and the result.

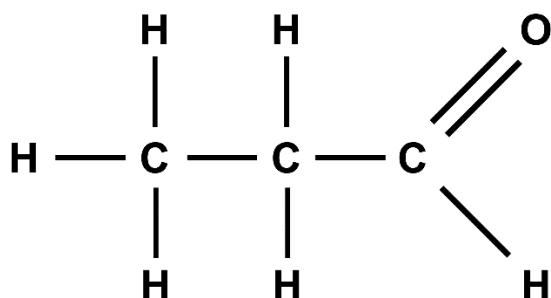
Questions that require a more detailed explanation contain the words 'explain fully' and are worth a minimum of 2 marks.

Structural formulae, functional groups and systematic naming

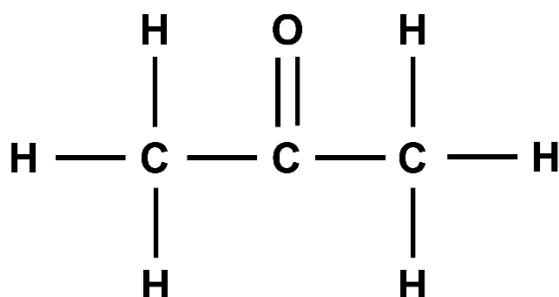
Molecular structures can be presented as shortened or full structural formulae. You must be familiar with the functional groups, be able to recognise and identify their shortened and full structural formulae, and be able to name them, for example the carbonyl group, C=O, found in aldehydes and ketones.

Comparisons of the shortened and full structures of the aldehyde, propanal and the ketone, propanone are shown below:

Propanal



Propanone



You should practise drawing full and shortened structural formulae of organic compounds, ensuring that the bond lines are connected to the correct atom. For example, in an alcohol molecule such as ethanol, the bond from the oxygen atom of the hydroxyl group must connect with a carbon atom: $-\text{OH}$ and not $-\text{HO}$.

You must learn the rules for systematic naming of organic compounds and use them to name structures. You should be able to draw structures given systematic names.

Researching chemistry

You must be familiar with the apparatus and techniques in the Higher Chemistry course.

You should practise drawing labelled apparatus line diagrams.

Open questions

Remember that there are no definitive answers to open questions. You can give a broad answer covering a number of aspects, or you can focus on one particular aspect and give a more detailed answer.

When tackling the question you should consider giving:

- ◆ chemical equations for the reactions involved
- ◆ definitions of terms mentioned in the question
- ◆ explanations of concepts relevant to the question
- ◆ details of experimental procedures and how the results may be used

Open questions are marked based on your overall demonstration of understanding, rather than on the number of points you make. The marker will not award 1 mark for each point you make. They will read your answer as a whole and judge the level of understanding you have shown.

Demonstrating a good level of understanding gains 3 marks, a reasonable level of understanding, 2 marks, a limited level of understanding, 1 mark, and no understanding, 0 marks. You do not need to give a perfect answer to gain the full 3 marks. However, your answer must be relevant to the area of chemistry mentioned in the question.

Revision resources

Past papers and specimen question papers

It is important to practise questions of a similar standard to those you will find in your exam.

You should use the past papers, specimen question papers and marking instructions on the [Higher Chemistry subject page](#):

- ◆ [2019 Higher Chemistry past paper](#) and [marking instructions](#)
- ◆ [2018 Higher Chemistry past paper](#) and [marking instructions](#)
- ◆ [Higher Chemistry specimen question paper 1](#) and [marking instructions](#)
- ◆ [Higher Chemistry specimen question paper 2](#) and [marking instructions](#)

2018 exam responses with marking commentary

You may find it useful to look at examples of marked responses from the 2018 Higher Chemistry exam. You can find these responses and accompanying marking commentaries on our [Understanding Standards website](#).

The responses give an indication of the level of detail you need to provide to gain maximum marks. They also highlight common mistakes learners make. They include a variety of marked open questions, calculations, explain-type questions, and researching chemistry questions.

Remember to look out for *Your Exams*. This guide contains essential information and rules that you need to know about SQA exams.