



National
Qualifications
2024

2024 Chemistry

National 5

Question Paper Finalised Marking Instructions

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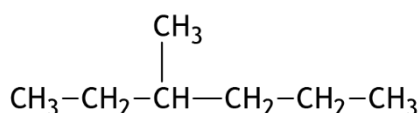
General marking principles for National 5 Chemistry

This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this paper. These principles must be read in conjunction with the detailed marking instructions, which identify the key features required in candidate responses.

- (a) Marks for each candidate response must always be assigned in line with these general marking principles and the detailed marking instructions for this assessment.
- (b) If a specific candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your team leader.
- (c) Marking should always be positive. This means that, for each candidate response, marks are accumulated for the demonstration of relevant skills, knowledge and understanding: they are not deducted from a maximum on the basis of errors or omissions.

A guiding principle in marking is to give credit for correct chemistry rather than to look for reasons not to award marks.

Example 1: The structure of a hydrocarbon found in petrol is shown below.



Name the hydrocarbon.

Although the punctuation is not correct, '3, methyl-hexane' should gain the mark.

Example 2: A student measured the pH of four carboxylic acids to find out how their strength is related to the number of chlorine atoms in the molecule.

The results are shown in the table.

<i>Structural formula</i>	<i>pH</i>
CH ₃ COOH	1.65
CH ₂ ClCOOH	1.27
CHCl ₂ COOH	0.90
CCl ₃ COOH	0.51

State how the strength of the acids is related to the number of chlorine atoms in the molecule.

Although not completely correct, an answer such as 'the more Cl₂, the stronger the acid' should gain the mark.

- (d) There are no half marks awarded.
- (e) Candidates must respond to the 'command' word as appropriate and may be required to write extended answers in order to communicate fully their knowledge and understanding.

- (f) Marks should be awarded for answers that have incorrect spelling or loose language **as long as the meaning of the word(s) is conveyed**. **Example:** Answers like ‘distilling’ (for ‘distillation’) and ‘it gets hotter’ (for ‘the temperature rises’) should be accepted.

However, the example below would not be given any credit, as an incorrect chemical term, which the candidate should know, has been given.

Example: If the correct answer is ‘ethene’, and the candidate’s answer is ‘ethane’, this should not be accepted.

- (g) A correct answer followed by a wrong answer should be treated as a cancelling error and no marks should be awarded.

Example: State what colour is seen when blue Fehling’s solution is warmed with an aldehyde.

The answer ‘red, green’ gains no marks.

If a correct answer is followed by additional information which does not conflict, the additional information should be ignored, whether correct or not.

Example: State why the tube cannot be made of copper.

If the correct answer is related to a low melting point, ‘Copper has a low melting point and is coloured grey’ would not be treated as having a cancelling error.

- (h) Unless a numerical question specifically requires evidence of working to be shown, full marks should be awarded for a correct final answer (including units if required) on its own.

The partial marks shown in the marking scheme are for use when working is given but the final answer is incorrect. An exception is when candidates are asked to ‘Find, by calculation’, when full marks cannot be awarded for the correct answer without working.

- (i) In most questions units are not required. However, if the candidate writes units then they must be correct. An incorrect unit would not be acceptable and one mark would not be awarded.

This marking instruction must only be applied a maximum of once per paper.

- (j) Where the marking instructions specifically allocate a mark for units in a calculation, this mark should not be awarded if the units are incorrect or missing. Missing or incorrect units at intermediate stages in a calculation should be ignored.

- (k) As a general rule, where a wrong numerical answer (already penalised) is carried forward to another step, credit will be given provided the result is used correctly. The exception to this rule is where the marking instructions for a numerical question assign separate ‘concept marks’ and an ‘arithmetic mark’. In such situations, the marking instructions will give clear guidance on the assignment of partial marks.

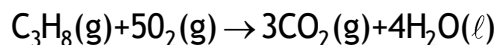
- (l) Ignore the omission of one H atom from a full structural formula provided the bond is shown or one carbon to hydrogen bond missing provided the hydrogen is shown.

- (m) A symbol or correct formula should be accepted in place of a name **unless stated otherwise in the marking instructions**.

- (n) When formulae of ionic compounds are given as answers it will only be necessary to show ion charges if these have been specifically asked for. However, if ion charges are shown, they must be correct. If incorrect charges are shown, no marks should be awarded.

- (o) If an answer comes directly from the text of the question, no marks should be awarded.

Example: A student found that 0.05 mol of propane, C₃H₈ burned to give 82.4 kJ of energy.



Name the type of enthalpy change which the student measured.

No marks should be awarded for 'burning' since the word 'burned' appears in the text.

- (p) Unless the question is clearly about a non-chemistry issue, eg costs in industrial chemical process, a non-chemical answer gains no marks.

Example: Suggest why the (catalytic) converter has a honeycomb structure.

A response such as 'to make it work' may be correct but it is not a chemical answer and the mark should not be awarded.

Marking instructions for each question

Section 1

Question	Answer	Mark
1.	B	1
2.	D	1
3.	D	1
4.	A	1
5.	C	1
6.	B	1
7.	B	1
8.	D	1
9.	C	1
10.	A	1
11.	C	1
12.	B	1
13.	B	1
14.	C	1
15.	B	1
16.	D	1
17.	A	1
18.	A	1
19.	B	1
20.	A	1
21.	B	1
22.	D	1
23.	C	1
24.	D	1
25.	D	1