



*Rewarding Learning*

**ADVANCED**  
**General Certificate of Education**  
**2025**

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## **Chemistry**

**Assessment Unit A2 3**  
*assessing*  
**Further Practical Chemistry**

### **Practical Booklet A**

**[ACH31]**

**THURSDAY 8 MAY, MORNING**

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# **MARK SCHEME**

## General Marking Instructions

### Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

### The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

Where one response is required to gain a mark, candidates will not gain credit if a correct response is given alongside one or more incorrect responses. This referred to as listing.

AVAILABLE  
MARKS

1 P is ethanoic acid

(a) colourless liquid/colourless solution

[1]

(b)

Test	Observations
1. Place the piece of universal indicator paper on a white tile. Place one drop of P on the universal indicator paper.	orange [1]
2. Place 5 cm <sup>3</sup> of P into a boiling tube. Add the piece of magnesium ribbon. Record all observations over a five minute period.	bubbles/fizzing [1] magnesium disappears/gets smaller [1] heat released [1] solution remains colourless [1]
3. Place 5 cm <sup>3</sup> of P into a boiling tube. In a fume cupboard, add 2 cm <sup>3</sup> of bromine water to the boiling tube. Return to your workstation, stopper the boiling tube and shake it vigorously. Allow contents to settle.	one layer/miscible [1]  yellow/orange [1]
4. Place 5 cm <sup>3</sup> of P into a boiling tube. Place a thermometer in the boiling tube and record the initial temperature.  Add one spatula measure of sodium carbonate. Stir with the thermometer, record all observations and the final temperature when the reaction is complete.	initial temperature with units [1]  bubbles/fizzing [1] sodium carbonate disappears/ colourless solution [1]  final temperature with units [1]

max [10]

11

2 G is glucose.

(a) Any **four** from:

bubbling

melts/liquid forms

darkens/changes to yellow/orange/brown

droplets of colourless liquid/condensation

fumes/vapour/smoke

black solid forms

sweet/caramel/toffee smell

max [4]

(b) (i) solid/G dissolves/colourless solution formed

[1]

(ii) Any **three** from:

purple/pink/blue/green/yellow/orange/brown

allow colourless at start or end

max [3]

(c) blue precipitate [1]

red/orange/brown/green precipitate [1]

green/yellow solution [1]

precipitate disappears [1]

[4]

AVAILABLE  
MARKS

12

**3 X is hydrated iron(III) chloride**

- (a) yellow/orange [1]
- (b) brown precipitate [1]  
insoluble in excess/precipitate remains/more precipitate forms [1] [2]
- (c) red solution [1]
- (d) white precipitate [1]
- (e) brown precipitate [1]  
bubbles/effervescence/fizzing [1] [2]

**Total**

**AVAILABLE  
MARKS**

7

**30**