



**General Certificate of Secondary Education
2017–2018**

**Double Award Science:
Chemistry**

Unit C1

Foundation Tier

[GSD21]

THURSDAY 8 NOVEMBER 2018, MORNING

**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.

1 (a)

Statement	Matching word/words
There are more of these elements than any other	Period
These elements have all got full outer shells of electrons	Metals
A horizontal row of elements	Alkali metals
The salts of these elements are white	Noble gases
Chlorine, bromine and iodine form part of one of these	Group
	Gases

5 × [1]

[5]

(b) explicit idea that fewer elements had been discovered (in 1869)

[1]

6

2 (a)

Property	solid	liquid	gas
Has a fixed shape	true	false	false
Can be compressed	false	false	true [1]
Will condense when cooled	false	false [1]	true
Takes the volume and shape of the container	false [1]	false	true

[3]

(b) (i) Z

[1]

(ii) sublimation

[1]

(iii) iodine

[1]

6

		AVAILABLE MARKS	
3	(a) (i) solute – sodium iodide or lead nitrate	[1]	
	(ii) solvent – water	[1]	
	(iii) insoluble substance – lead iodide	[1]	
	(iv) compound – lead iodide/sodium iodide (either)	[1]	
	(v) anions – iodide and nitrate (both required)	[1]	
(b) Diagram should show: filter funnel, filter paper, flask or beaker or other suitable container award [2] for a complete diagram which “works”, solid should be shown in the filter paper and liquid in the flask/container [1] at least 2 labels [1]	[4]		
(c) sodium nitrate	[1]	10	
4	(a) floats	[1]	
	(b) lilac	[1]	
	(c) lithium	[1]	
	(d) purple	[1]	
	(e) hydrogen	[1]	5
5	(a) (i) Fe	[1]	
	(ii) K ⁺ or Mg ²⁺	[1]	
	(iii) I ⁻	[1]	
	(iv) CO	[1]	
	(v) NO ₃ ⁻	[1]	
	(b) (i) 3	[1]	
	(ii) 10	[1]	
	(iii) Fluorine	[1]	8

10 Indicative content

- 19 protons
- 18 electrons
- 20 neutrons
- protons in nucleus
- neutrons in nucleus
- electrons in shells
- electronic configuration 2,8,8

Band	Response	Mark
A	Candidates must use appropriate scientific terms throughout to describe the structure of an aluminium atom using 6–7 of the points in the indicative content. They use good spelling, punctuation and grammar and the form and style are of a high standard.	[5]–[6]
B	Candidates use 4–5 points from the indicative content to describe the structure of an aluminium atom. They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
C	Candidates use 2–3 of the points from the indicative content to describe the structure of an aluminium atom. They use limited spelling, punctuation and grammar and make little use of scientific terms. The form and style are of a limited standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6]

Total**AVAILABLE
MARKS**

6

70