



General Certificate of Secondary Education
2019

Single Award Science

Unit 4

Booklet A

Foundation Tier

[GSA41]

**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.

Task 1

- | | | |
|---|--|-----|
| 1 | (a) Results recorded [1]
correct calculation of change in temperature [1] | [2] |
| | (b) (i) Acid is corrosive/metal filings in eye/glassware is breakable
(or other suitable) | [1] |
| | (ii) Suitable step to minimise risk identified in (i) | [1] |
| | (c) (i) The temperature increased | [1] |
| | (ii) y-axis correctly scaled [1]
all 4 bars plotted correctly [2]
(3 bars gains [1]) | [3] |
| | (iii) Iron, zinc, magnesium
(or correct order based on (a)) | [1] |
| | (iv) Repeat the experiment for each metal | [1] |
| | (d) To reduce heat loss to the surroundings | [1] |
| | (e) (i) Disperses the heat evenly | [1] |
| | (ii) Balance | [1] |
| | (f) Same volume of acid/same amount of metal
(or other suitable) | [1] |
| | (g) Change more quickly | [1] |

AVAILABLE
MARKS

15

Task 2

- 2 (a) Results recorded [1]
1 decimal place used [1] [2]
- (b) (i) Ammeter [1]
(ii) Amp(ere) [1]
(iii) Risk: Wire becomes hot [1]
steps to minimise: Keep voltage below 10 V or other suitable [1] [2]
(iv) Same metal for resistance wire/same length of resistance wire/same
thickness of resistance wire
(or other suitable) [1]
- (c) (i) y-axis correctly scaled [1]
all 5 points plotted correctly [2]
(4 points gains [1])
line of best fit [1] [4]
(ii) As the voltage increases the current increases [1]
(iii) Yes, the result does not follow the trend
or
No, the results follow the trend [1]
- (d) (i) Controlled [1]
(ii) Power supply switched off between measurements
(or other suitable) [1]

Total

AVAILABLE
MARKS

15

30