



Rewarding Learning

General Certificate of Secondary Education

Double Award Science

Biology

Unit 7 Practical Skills

Booklet A

Higher Tier

[GDW75]

Assessment

**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.

Additional Guidance for use with Double Award (Biology) Mark Schemes.

This document aims to provide additional guidance notes to assist teachers with the application of the mark schemes for Double Award Biology. It is not intended to be wholly prescriptive but, rather, to assist with clarifying the mark scheme so that it can be applied consistently and accurately.

1 Symbols and terms used in the mark scheme

Symbol	Explanatory note
;	A semi-colon separates the marks to be awarded e.g. if there are 2 marks to be awarded, there will be 2 semi-colons - one after each marking point.
/	A solidus gives the acceptable alternatives for a particular mark. Answers separated by a solidus can only be awarded 1 mark.
()	Text inside brackets is not required to gain a mark, it is added to provide context or clarification for the marker.
Bold	Text in bold in the mark scheme is an essential requirement in an answer if the mark is to be awarded.
Allow	This shows where the mark scheme has been expanded with other acceptable answers.
Not allow	An unacceptable response - no mark is to be awarded.
E.C.F.	Error carried forward. This allows candidates to gain credit for answers where an error has been made at some point in a (usually) mathematical answer. It prevents penalising a candidate twice.

2 Spelling

Although we encourage correct spelling of all Biological terms, in most cases, candidates are not penalised for an incorrect spelling as long as the spelling is not of another, similar word and the marker can recognise the correct word.

There are a few exceptions to this, however. If two Biological words are very similar markers must ensure that they are used in the correct context. In these papers the notable example is ureter/urethra.

3 Alternative wording

We have not included all the alternatives for common words. Teachers should use their professional judgement to decide if a candidate means the same in his/her response as is noted on the mark scheme, e.g. if the mark scheme states 'increases', markers would award answers such as 'rises'; 'goes up'.

4 Allowing converse responses

We have noted in the mark schemes where the converse response to that asked for in the question, is acceptable. In these cases, marks can only be awarded if the candidate clearly shows that he/she is referring to the converse situation.

For example, a question might ask for the difference in the shape of spongy mesophyll cells compared to palisade mesophyll cells. The correct answer, as per the mark scheme, is rounder/ shorter/less rectangular/more irregular. The candidate will gain the mark for writing any one of these words or phrases. However, if the candidate refers to palisade mesophyll cells he/she must state this i.e. 'palisade mesophyll cells are more rectangular'. In summary, if the candidate does not qualify his/her answer, it is assumed that he/she is referring to the subject of the question (first item/ condition, etc mentioned in the question).

5 Calculations

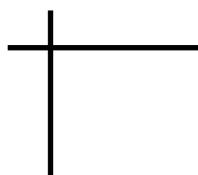
Full marks are always given for a correct answer, even if a candidate does not show any working. If the answer is incorrect then markers will look at any working shown and will award marks as per the guidance in the mark scheme. Note that if the question requires an answer to be given to two decimal places, then the correct rules of rounding up or down will need to be applied in order to gain full marks.

6 Correct responses with incorrect responses

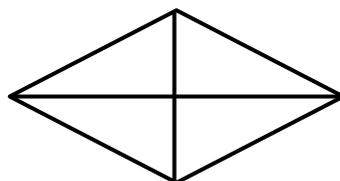
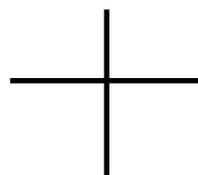
Occasionally, candidates will give you a correct answer and an incorrect answer (e.g. the correct answer is 'increases', candidate writes 'increases or decreases'). In this case, the incorrect answer will cancel out the correct answer and the candidate will be awarded 0 marks.

7 Punnett Squares

Candidates are awarded a mark in genetics questions for knowing how to draw a Punnett square. The minimum acceptable response is shown below where the two lines clearly separate the gametes from the results of the cross.



Candidates will **not** be awarded the mark if the following shapes are drawn for Punnett squares.



8 Guidance for awarding marks on Quality of Written Communication (QWC) questions in DAS Biology.

- (a) Mark candidate's work according to the points in the **indicative content and instructions** for the particular question.
- (b) Use the number of indicative content marks obtained to place the candidate into the appropriate marking band, A, B, C or D.

See table below.

Number of indicative marking points given in the candidate's response	Marking band for candidate
5 or 6	A
3 or 4	B
1 or 2	C
0/no response	D

(c) Consider the Quality of Written Communication of the candidate's response.

The **minimum** requirement for the Quality of Written Communication mark is that the candidate must have **at least** one sentence starting with a capital letter and ending with a full stop.

If Quality of Written Communication mark (QWC) is to be awarded then it will give the candidate the top mark **within the band** they are already in from their indicative content marks.

The QWC mark **does not** take candidate into the next band.

When QWC mark is being awarded:-

Marking Band	Number of indicative points	Total mark
A	5 or 6	6
B	3 or 4	4
C	1 or 2	2
D	0/no response	0

When QWC mark is not being awarded:-

Marking Band	Number of indicative points	Total mark
A	5 or 6	5
B	3 or 4	3
C	1 or 2	1
D	0/no response	0

		AVAILABLE MARKS
1	(a) Recording of their result in the table	[1]
	(b) Recording of their result in the table	[1]
	(c) Recording of other group's results	[1]
	(d) [1] for each average worked out correctly	[2]
	(e) Carry out more repeats/get another group's results	[1]
	(f) Height of the froth	[1]
	(g) 5 cm ³ /ml; of water/boiled enzyme/other (named) enzyme.	[2]
	(h) Difficult to measure height of froth/level of stirring may have varied/set temperatures may have dropped/time not measured accurately/boiling tubes different sizes	[1]
	(i) Any two from: <ul style="list-style-type: none"> • enzyme denatured/shape of active site/enzyme changed; • less or fewer E/S reactions; • rate of reaction lower/slower; • less substrate broken down/less oxygen produced 	[2]
2	(a) More froth for liver and kidney/less froth for parsnip and carrot; any two relevant data points that compare an animal tissue to a plant tissue	[2]
	(b) Carrot parsnip kidney liver	[1]
Total		15