



GCSE Further Additional Science

Foundation Tier

Unit 1 Biology 3F

**SPECIMEN MARK SCHEME
V1**

Quality of Written Communication and levels marking

In Question 7 candidates are required to produce extended written material in English, and will be assessed on the quality of their written communication as well as the standard of the scientific response.

Candidates will be required to:

- use good English
- organise information clearly
- use specialist vocabulary where appropriate.

The following general criteria should be used to assign marks to a level:

Level 1: basic

- Knowledge of basic information
- Simple understanding
- The answer is poorly organised, with almost no specialist terms and their use demonstrating a general lack of understanding of their meaning, little or no detail
- The spelling, punctuation and grammar are very weak.

Level 2: clear

- Knowledge of accurate information
- Clear understanding
- The answer has some structure and organisation, use of specialist terms has been attempted but not always accurately, some detail is given
- There is reasonable accuracy in spelling, punctuation and grammar, although there may still be some errors.

Level 3: detailed

- Knowledge of accurate information appropriately contextualised
- Detailed understanding, supported by relevant evidence and examples
- Answer is coherent and in an organised, logical sequence, containing a wide range of appropriate or relevant specialist terms used accurately.
- The answer shows almost faultless spelling, punctuation and grammar.

In order to attain a mark within a certain level, **both** the science **and** the QWC must be of a standard appropriate to that level.

COMPONENT NUMBER: Unit 1 Biology 3F

COMPONENT NAME: Further Additional Science

STATUS: Specimen v1

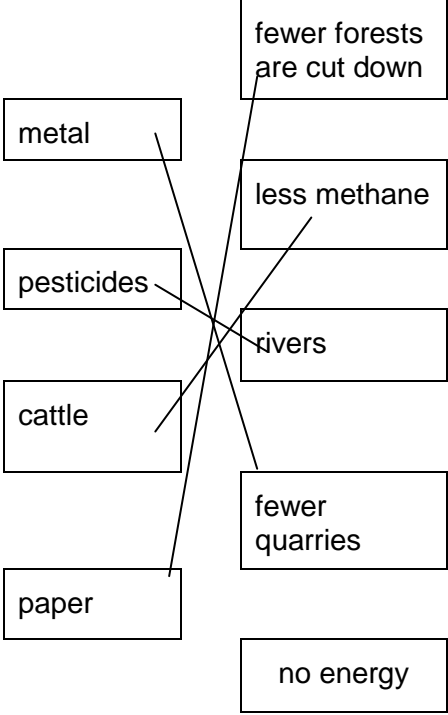
question	answers	extra information	mark
1(a)	B		1
1(b)	C		1
1(c)	D		1
1(d)(i)	upwards / outwards		1
	flattened		1
1(d)(ii)	oxygen / carbon dioxide		1
Total			6

question	answers	extra information	mark
2	B		1
	C		1
	A		1
Total			3

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question	answers	extra information	mark
3		all four correct = 4 marks three correct = 3 marks two correct = 2 marks one correct = 1 mark extra line from a statement cancels the mark	4
Total			4

COMPONENT NUMBER: Unit 1 Biology 3F**COMPONENT NAME: Further Additional Science****STATUS: Specimen v1**

question	answers	extra information	mark
4(a)	300 kJ		1
4(b)	100 kJ		1
4(c)	0.7 (7/10)		1
4(d)	are warmer / move less		1
Total			4

question	answers	extra information	mark												
5(a)	ions	accept urea	1												
5(b)(i)	D		1												
5(b)(ii)	0.9:1	accept 9:10	1												
	6:1		1												
5(b)(iii)	C	allow ecf from (b)(ii)	1												
5(c)	178 dm ³		1												
5(d)	<table border="1"> <tr> <th>Comp. with Man A</th><th>The same</th><th>Higher</th><th>Lower</th></tr> <tr> <td>urine</td><td></td><td></td><td>✓</td></tr> <tr> <td>concentration</td><td></td><td>✓</td><td></td></tr> </table>	Comp. with Man A	The same	Higher	Lower	urine			✓	concentration		✓		extra box ticked in any row cancels the mark for that row	2
Comp. with Man A	The same	Higher	Lower												
urine			✓												
concentration		✓													
Total			8												

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question	answers	extra information	mark
6(a)(i)	0M		1
6(a)(ii)	water entered cells by osmosis because the concentration of water outside cells was higher than inside the cells		1 1
6(b)	0.5M because the chip did not change mass in this solution		1 1
Total			5

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7			
Marks awarded for this answer will be determined by the Quality of Written Communication (QWC) as well as the standard of the scientific response. Examiners should also refer to the information on page 2.			
0 marks	Level 1 (1-2 marks)	Level 2 (3-4 marks)	Level 3 (5-6 marks)
No relevant content.	There is a brief description of at least one reason for deforestation or at least one effect of deforestation.	There is a scientific description of the reasons for deforestation and an attempt at the effects of deforestation but the account is limited to either direct or indirect effect.	There is a clear and detailed scientific description of the reason for deforestation and effects on the environment.
examples of biology points made in the response reasons for deforestation: <ul style="list-style-type: none">• timber• land for agriculture• roads and buildings• land for biofuels effects of deforestation: <ul style="list-style-type: none">• reduction in biodiversity• increase in carbon dioxide content of atmosphere• global warming• climate change• rising sea levels• changes in migration patterns			
Total			6

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STATUS: Specimen v1

question	answers	extra information	mark
8(a)(i)	burning fossil fuels / coal / gas / oil	accept driving vehicles /eg cars accept coal-fired power stations accept car emissions	1
8(a)(ii)	(sulfur dioxide) makes rain acidic or makes acid rain or lowers pH		1
8(b)(i)	(sulfur dioxide) reduces the number of leaves or reduces the total leaf area	accept causes fewer leaves to grow	1
8(b)(ii)	(there are fewer leaves / less leaf area) so there is less photosynthesis		1
	as a result there is less food / sugar / starch is supplied to the roots / stems, slowing their growth		1
Total			5

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question	answers	extra information	mark
9(a)	the scientists' figures are based on research / calculations / data or scientists sample whole area	ignore reasons based on bias because scientists sample a <u>wider</u> area than the fishermen = 2 marks	1
	whereas the fishermen's opinions are based on impression / hearsay / experience or fishermen's opinions are based on fishing in well-stocked / limited areas	because fishermen <u>only</u> fish in well-stocked areas = 2 marks if no marks gained fishermen's opinion and scientists' opinion gains 1 mark	1
9(b)(i)	net size		1
9(b)(ii)	allows younger fish to reach maturity / breeding age		1
Total			4

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question	answers	extra information	mark
10(a)(i)	(D) greatest loss in mass in a given time		1
10(a)(ii)	(yes) leaves B and C both lost mass		1
10(b)(i)	stomata	accept stoma	1
10(b)(ii)	there are no stomata on upper surface and most water is lost via stomata so blocking the stomata on leaf B will reduce the water loss compared with leaf C		1 1
Total			5

question	answers	extra information	mark
11(a)	concentration rose to 7.9 then fell to normal at 120 minutes		1 1
		allow rose then fell for 1 mark	
11(b)	there is a lower maximum / peak in the blood sugar concentration with wholemeal bread there is also a slower rise in blood sugar concentration with wholemeal bread because of the above the person needs to take less insulin or is less likely to hyper		1 1 1
Total			5

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question	answers	extra information	mark
12	advantages		
	<ul style="list-style-type: none">• useful where no other treatment available / patients near to death		1
	or		
	<ul style="list-style-type: none">• extends lifespan		
	disadvantages		
	<ul style="list-style-type: none">• low success rate		1
	<ul style="list-style-type: none">• device has limited lifespan		1
	or		
	battery will need charging		
	<ul style="list-style-type: none">• discomfort from heart / battery / controller		1
	<ul style="list-style-type: none">• risk of infection		1
Total			5