GCSE Additional Science 1

Foundation Tier

Unit 5F

SPECIMEN MARK SCHEME

Version 1.0

Quality of Written Communication and levels marking

In Question 16(b) 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

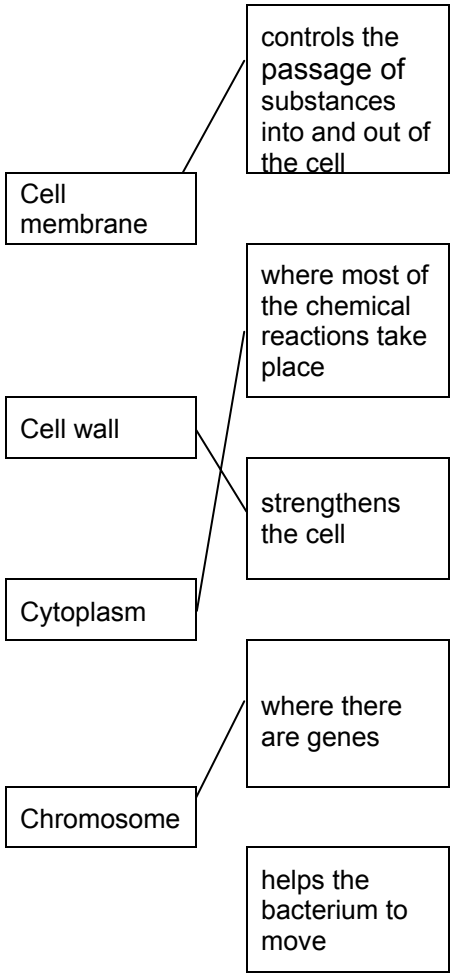
- Knowledge of accurate information appropriately contextualised
- Detailed understanding, supported by relevant evidence and examples
- Answer is coherent and in an organised, logical sequence, containing a wide range of appropriate or relevant specialist terms used accurately.
- The answer shows almost 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: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
1(a)		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
1(b)	any **two** from: • nucleus • no cell wall • separate chromosomes		2
1(c)	A		1
1(d)	diffusion		1
Total			**8**

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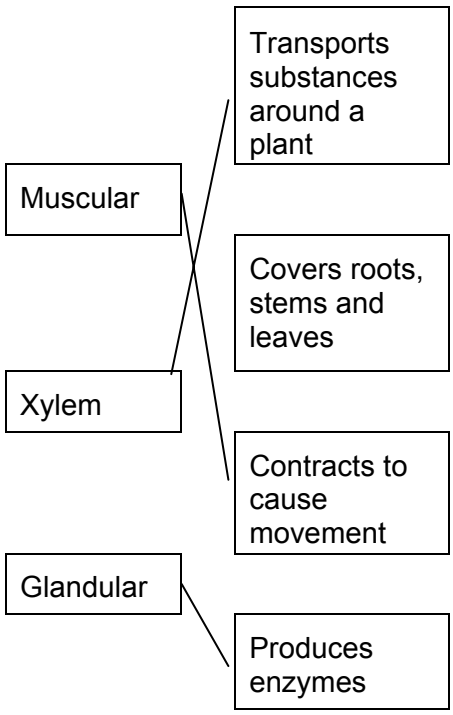
question	answers	extra information	mark
2		three correct = **3** marks two correct = **2** marks one correct = **1** mark extra line from a statement cancels the mark	3
Total			**3**

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question	answers	extra information	mark
3(a)	Place all the quadrats randomly in two different sample areas	extra boxes ticked cancels the mark	1
3(b)	2.2	correct answer gains **2** marks if answer incorrect, evidence of correct method gains **1** mark allow only **1** mark for a rounded mean	2
3(c)	15 120	correct answer gains **2** marks if answer incorrect, evidence of correct substitution gains **1** mark	2
Total			**5**

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COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
4(a)	as control(s)	ignore fair test	1
4(b)	the same volume of culture solution		1
4(c)	plants with all mineral salts grew best plants with mineral salts but no nitrate grow better than without any mineral salts		1 1
Total			**4**

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STATUS: Specimen V 1.0

question	answers	extra information	mark
5(a)(i)	all		1
5(a)(ii)	four		1
5(a)(iii)	covalent		1
5(b)	hard		1
5(c)	carbon dioxide	accept carbon monoxide accept CO_2 or CO	1
Total			**5**

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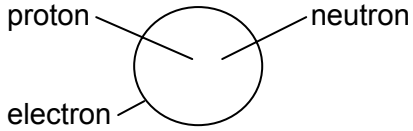
COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
6(a)		**1** mark each, in these positions only	3
6(b)	4		1
6(c)	**A**		1
Total			**5**

COMPONENT NUMBER: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
7(a)(i)	element		1
7(a)(ii)	compound		1
7(b)	an / one electron from the sodium atom is lost / transferred to form a sodium ion		1 1
7(c)(i)	electrons in outer shell correct indication that the ion is negative		1 1
7(c)(ii)	because oppositely charged ions attract each other **or** because chloride ions are negative and sodium ions are positive		1
Total			**7**

COMPONENT NUMBER: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
8(a)	because nano-sized particles are smaller than normal-sized particles may cause harm when they are <u>inside</u> the body		1 1
8(b)	any **two** from: • (new) computers • (new) catalysts • (new) coatings • highly selective sensors • stronger / lighter construction materials		2
Total			**4**

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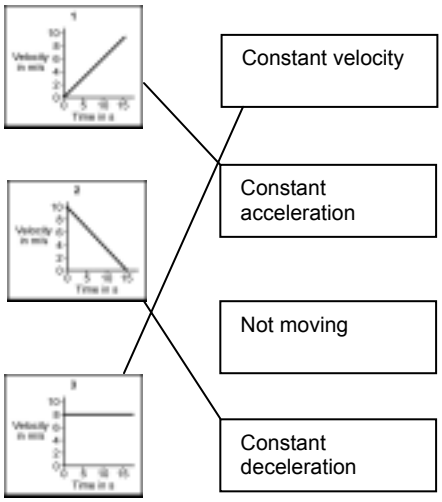
STATUS: Specimen V 1.0

question	answers	extra information	mark
9	**1** mark for each line  	if more than 1 line is drawn from a graph in List A then all those lines are marked incorrect	3
Total			**3**

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STATUS: Specimen V 1.0

question	answers	extra information	mark
10(a)	gravity		1
10(b)	air resistance		1
10(c)	bigger than accelerates downwards	correct order only	1 1
Total			**4**

COMPONENT NUMBER: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
11(a)(i)	1500	allow **1** mark for subtraction shown ie 2000 – 500	2
11(a)(ii)	it accelerates in a forward direction	accept gains speed / velocity	1 1
11(b)(i)	23 (m)		1
11(b)(ii)	20 (m)	only this answer	1
11(b)(iii)	drinking alcohol / taking drugs tired	 accept (a specific) distraction accept any factor that affects the driver's reactions	1 1
Total			**8**

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COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
12(a)	4 (N)	allow **1** mark for substitution into correct equation ie 0.4 × 10	2
12(b)	4.8	their (a) × 1.2 correctly calculated gains **2** marks allow **1** mark for substitution into correct equation ie 4 × 1.2 or their (a) × 1.2	2
	joule or J		1
Total			**5**

COMPONENT NUMBER: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
13	respiration		1
	production of fat or oil		1
	production of cellulose		1
	production of proteins		1
Total			**4**

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COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
14(a)	area of strips **or** length of transects **or** number of transects		1
14(b)(i)	because squirrels are mobile and could be missed / counted twice		1
14(b)(ii)	numbers of larders observed likely to be lower than actual number	do **not** accept squirrels share larders or squirrels have more than one larder	1
	since it is unlikely that all could be spotted if 5 m away **or** old larders no longer being used **or** squirrels moved on / died		1
14(c)	(no)		
	because the bars show the range of the number of squirrel larders in the different types of woodland		1
	because, although spruce woodlands have the larger ranges, some spruce woodlands will have very low numbers of larders		1
Total			**6**

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question	answers	extra information	mark
15(a)(i)	column		1
15(a)(ii)	mass spectrometer		1
15(b)(i)	165	if answer is not correct then evidence of correct working gains **1** mark eg (10x12) + 15 + 14 + 16	2
15(b)(ii)	10.37 (%)	accept 10 / 10.4 / 10.37..... if answer is not correct then evidence of correct working gains **1** mark eg minimum evidence would be 14 / 135	2
15(c)	any **two** from: • faster • more accurate • detects smaller amounts		2
15(d)	avoid bias improve reliability	accept to check / compare the result	1 1
Total			**10**

COMPONENT NUMBER: AS1FP

COMPONENT NAME: GCSE Additional Science 1 Unit 5F

STATUS: Specimen V 1.0

question	answers	extra information	mark
16(a)	4.5	allow **1** mark for correct substitution ie 9 ÷ 2	2
	m/s^2	mark independently	1

16(b)			
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 the performance of the running shoes on the three surfaces.	There is some description of the performance of the running shoes on the three surfaces.	There is a clear, balanced and detailed description of the performance of the running shoes on the three surfaces.

examples of the physics points made in the response	**extra information**
• the lower the impact the better (performance) • make B better / lower impact on polyurethene • make C better / lower impact on acrylic • make B better / lower impact on grass • make B best overall / make A worst overall • little difference in performance of make C on all surfaces	

Total			**9**