



*Rewarding Learning*

**General Certificate of Secondary Education  
2016–2017**

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**Science: Single Award**

Unit 1 (Biology)

Foundation Tier

**[GSS11]**

**TUESDAY 16 MAY 2017, AFTERNOON**

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**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)

Vitamin	Function	Source
		oranges [1]
D [1]		

[2]

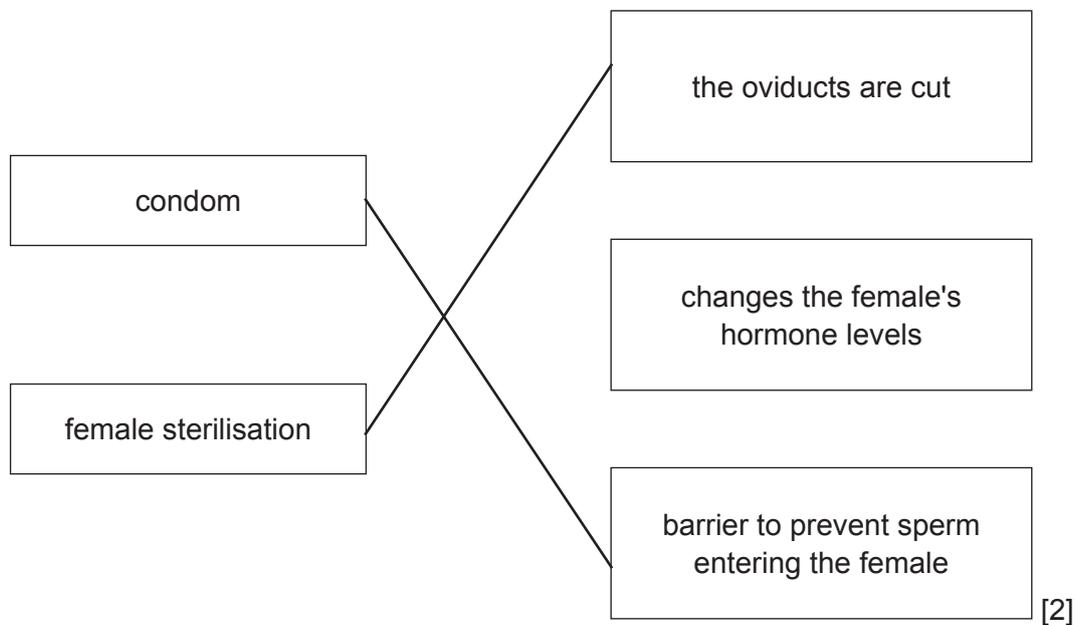
(b) Benedict's [1] heated [1] [2]

2 (a)

Name of part	Function
sperm tube [1]	
testis [1]	

[2]

(b) Method Description



(c) Condom [1]

AVAILABLE MARKS
4
5

			AVAILABLE MARKS	
3	(a)	(i) All points correct [2] 4 points correct [1] correct line [1]	[3]	
		(ii) 1975 – 2000	[1]	
	(b)	(i) Number of extinctions increased after 1925 when humans arrived	[1]	
		(ii) Any <b>two</b> from: <ul style="list-style-type: none"> <li>• hunting (by humans)</li> <li>• (humans) introducing predators/competitors</li> <li>• habitat loss</li> <li>• disease</li> <li>• climate change</li> </ul>	[2]	
4	(a)	(i) Miss some bubbles when counting in <b>A</b> [1] bubbles of different sizes in <b>A</b> [1]	[2]	
		(ii) Any <b>two</b> from: <ul style="list-style-type: none"> <li>• same temperature</li> <li>• same size/type of pondweed</li> <li>• same size of test tube/water level the same</li> <li>• same strength of bulb/distance (if qualified)</li> <li>• same length of time</li> </ul>	[2]	
	(b)	(i) Chromosome/gene/DNA	[1]	
		(ii) More growth [1] more profit [1]	[2]	
5	(a)	(i) Antigen	[1]	
		(ii) Antibodies produced by the body	[1]	
		(iii) Antibody doesn't fit antigen/need to produce antibodies that are complementary to (fit) the antigens	[1]	
	(b)	Jane	[1]	4
6	(a)	(i) Numbers remained low/steady until 4 km [1] then increased [1]	[2]	
		(ii) Fewer lichens in city centre where pollution levels are higher (or converse)	[1]	
		(iii) 10 trees used at each point/results based on an average	[1]	
		(iv) Line drawn above the 2010 level and less of an incline	[1]	
	(b)	Measure area of ice field remaining/lost [1] over time (to measure rate) [1]	[2]	7

		AVAILABLE MARKS
<b>7</b>	<b>(a) ff</b>	[1]
	<b>(b) Gametes correct [1] offspring correct [1]</b>	[2]
	<b>(c) Based on viable Punnett square</b>	[2]
<b>8</b>	<b>(a) (i) Coronary arteries are very narrow [1] less cholesterol needed to cause a blockage [1]</b>	[2]
	<b>(ii) glucose + oxygen [1] → carbon dioxide + water [1]</b>	[2]
	<b>(iii) Provide energy</b>	[1]
	<b>(b) (i) £12 000 less income</b>	[1]
	<b>(ii) Ill parent unable to work/other parent needs time off work to care for patient</b>	[1]
	<b>(iii) Many people affected/long time needed in hospital (care)/specialist equipment or drugs needed</b>	[1]
<b>9</b>	<b>(a) (i) Brain</b>	[1]
	<b>(ii) Muscle</b>	[1]
	<b>(iii) Less [1] faster [1]</b>	[2]
	<b>(b) (More) hormones/auxin on shaded side of plant/shoot/stem [1] (more) growth on that side [1] plant bends towards light [1]</b>	[3]
		5
		8
		7

**10 Indicative content**

- peer pressure/experimentation/addicted/enjoy the experience/being sociable
- tar
- causes cancer/bronchitis/emphysema
- carbon monoxide
- causes blood to carry less oxygen
- nicotine
- is addictive/affects heart rate

<b>Band</b>	<b>Response</b>	<b>Mark</b>
A	Candidates must use appropriate specialist terms throughout to describe a reason why people smoke and the harm it can cause using <b>six or seven</b> of the points above, in a logical sequence. They use good spelling, punctuation and grammar and the form and style are of a high standard.	[5]–[6]
B	Candidates use some appropriate specialist terms to describe a reason why people smoke and the harm it can cause using <b>four or five</b> of the points above, in a logical sequence. They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
C	Candidates describe a reason why people smoke and/or the harm it can cause using <b>one to three</b> of the above points. However, these are not presented in a logical sequence. They use limited spelling, punctuation and grammar and have made limited use of specialist terms. The form and style are of a limited standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6]

**Total****AVAILABLE  
MARKS**

6

**60**