



**General Certificate of Secondary Education**  
**January 2019**

---

**Biology**

Unit 1

Foundation Tier

**[GBY11]**

**MONDAY 14 JANUARY, MORNING**

---

**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.

			AVAILABLE MARKS	
1	(a)	Oak leaves, weasel, fox; [1] Arrows; [1]	[2]	4
	(b)	Sun/sunlight;	[1]	
	(c)	Weasel/hedgehog/owl/fox;	[1]	
2	(a)	A – Colon; [1] B – Ileum; [1] C – Rectum; [1]	[3]	5
	(b)	Line labelled G on stomach;	[1]	
	(c)	Less protein digested/take longer to digest protein;	[1]	
3	(a)	Keep in dark/cupboard; [1] 24 hours – 48 hours; [1]	[2]	6
	(b)	Light;	[1]	
	(c)	Any three from: <ul style="list-style-type: none"> <li>• Part B received no light;</li> <li>• No photosynthesis;</li> <li>• No starch present;</li> <li>• Iodine remained yellow/brown;</li> </ul>	[3]	
4	A; [1] Where reactions take place; [1] Cell membrane; [1] C; [1] Contains genetic information [/genes/chromosomes]/controls the cell; [1] D; [1]	[6]	6	
5	(a)	Sulfur dioxide/nitrogen oxide/NOx;	[1]	5
	(b)	Gas rises into the atmosphere; [1] Reacts/dissolves/combines with water [vapour]; [1]	[2]	
	(c)	Gases carried by wind; [1] Falls [as acid rain] in another country/across boundaries; [1]	[2]	

			AVAILABLE MARKS		
6	(a)	Diaphragm;	[1]		
	(b)	Description – Balloons inflate;	[1]		
		Explanations – Any <b>two</b> from:			
		• Increased volume;			
		• Decreased pressure;			
		• Higher atmosphere pressure forces air into balloons;	[2]		
	(c) (i)	Descriptions – Oxygen percentage falls/reduces/lower; [1] Carbon dioxide percentage rises/increases/higher; [1]			
		Explanations – O <sub>2</sub> used, CO <sub>2</sub> produced; [1] In respiration; [1]	[4]		
	(ii)	N <sub>2</sub> not used or produced by body/same volume absorbed as released by the blood;	[1]		9
7	(a)	A – Lens; [1] B – Iris; [1] C – Optic nerve; [1]	[3]		
	(b) (i)	Pupil gets smaller;	[1]		
	(ii)	To protect/prevent damage to retina;	[1]	5	
8	(a) (i)	6; [1] 6 × 20 × 4.2; [1] 504; [1]	[3]		
	(ii)	Any <b>two</b> from:			
		• Heat lost to air;			
		• Heat absorbed by boiling tube/apparatus;			
		• Some food is unburnt;	[2]		
	(iii)	More fat in biscuit; [1] 16 vs 2/8 times more energy in fat; [1]	[2]		
	(b) (i)	Activity/Movement/heat/growth/repair/reproduction;	[1]		
	(ii)	Any <b>two</b> from:			
		• Gender;			
		• Activity level;			
		• Age;			
		• Pregnancy;	[2]		
	(c)	Any <b>two</b> from:			
		• Heart disease/heart attack/stroke/high blood pressure;			
		• Diabetes;			
		• Arthritis;	[2]	12	

			AVAILABLE MARKS	
9	(a)	Any <b>two</b> from: <ul style="list-style-type: none"> <li>• Volume/concentration of enzyme;</li> <li>• Volume/concentration of starch;</li> <li>• Time;</li> </ul>	[2]	8
	(b)	Starch broken down; [1] To produce glucose; [1]	[2]	
	(c)	<ul style="list-style-type: none"> <li>• Starch not broken down;</li> <li>• Enzyme [/lipase] is not specific to starch/lipase breaks down fat;</li> <li>• Lock and key theory;</li> <li>• Active site not the correct shape;</li> </ul>	[4]	
10	(a)	<b>A</b> – Photosynthesis; [1] <b>B</b> – Respiration; [1] <b>C</b> – Fossilisation; [1]	[3]	8
	(b)	(i) As CO <sub>2</sub> increases so does temperature/correlation described;	[1]	
		(ii) Increased combustion of fossil fuels/increased population; <b>Accept:</b> Industrial revolution;	[1]	
	(c)	Heat enters the Earth's atmosphere; [1] <b>Less</b> escapes back out/ <b>more</b> reflects back to Earth; [1] Temperature rises/global warming; [1]	[3]	
11	(a)	Quadrat;	[1]	6
	(b)	Forest <b>A</b> has more species; [1] 6 vs 3; [1]	[2]	
	(c)	Forest <b>A</b> has: Higher light intensity; [1] Higher temperature; [1] More photosynthesis; [1]	[3]	

## 12 Indicative Content

1. Squeeze/crush juice from fruit;
2. Use known/measured volume of juice/reagent;
3. DCPIP;
4. Colour change from blue to pink/clear;
5. Count number of drops/measure volume required for colour change;
6. More drops means less vitamin C in juice/converse;

**Accept:** bullet points which start with capital letter, contain a verb and end in full stop as sentences.

Band	Response	Mark
A	Candidates <b>must use appropriate, specialist terms</b> throughout <b>using at least 5 of the points</b> . They use <b>good</b> spelling, punctuation and grammar and the form and style are of a <b>high standard</b> .	[5]–[6]
B	Candidates use <b>some appropriate, specialist terms</b> throughout <b>using at least 3 of the points</b> . They use <b>satisfactory</b> spelling, punctuation and grammar and the form and style are of a <b>satisfactory</b> standard.	[3]–[4]
C	Candidates make <b>little use of specialist terms</b> throughout <b>using at least 1 of the points</b> . The spelling, punctuation and grammar, form and style are of a <b>limited</b> standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6]

**Total**

AVAILABLE  
MARKS

6

**80**