



*Rewarding Learning*

**General Certificate of Secondary Education  
2016**

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**GCSE Biology**

Unit 1

Foundation Tier

**[GBY11]**

**FRIDAY 10 JUNE, MORNING**

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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.

			AVAILABLE MARKS	
1	(a)	A – Objective [lens]; [1] B – Focus [knob]; [1]	[2]	4
	(b)	Eyepiece [lens];	[1]	
	(c)	Stage would move (up or down);	[1]	
2	(a)	Benedict's;	[1]	5
	(b)	Add to/mix with food sample; Heat;	[2]	
	(c)	Blue; [brick] red <b>Accept:</b> green/orange	[2]	
3	(a)	A – Cell wall; [1] B – Nucleus; [1]	[2]	6
	(b)	Large central vacuole drawn; Chloroplast drawn in cytoplasm [between vacuole and cell membrane];	[2]	
	(c)	(i) Cells clearly visible/seen;	[1]	
	(ii) Animal;	[1]		
4	(a)	(i) Buccal cavity;	[1]	8
	(ii) Increases [speed]/faster; [1] Larger surface area (for enzymes); [1]	[2]		
	(b)	Starch molecule too large/sugar small enough; [1] To fit/pass through (capillary wall)/into blood; [1] <b>Accept:</b> Starch insoluble/sugar soluble;	[2]	
	(c)	Ileum; [1] Colon; [1] Absorb water; [1]	[3]	

			AVAILABLE MARKS	
5	(a)	Make food; [1] By photosynthesis/using sunlight; [1]	[2]	10
	(b)	3;	[1]	
	(c)	Badger;	[1]	
	(d)	Hedgehog and Badger; [1] Arrows; [1]	[2]	
	(e)	Less rabbits for badgers to eat; [1] So badgers eat more hedgehogs/more of hedgehogs' food; [1] <b>or</b> Less rabbits for fox to eat; [1] Fox eats more earthworms so less food for hedgehogs; [1]	[2]	
	(f)	(i) Counting setts does not harm badgers/can be done during day/doesn't have to be done at night/may not trap all the badgers;	[1]	
	(ii) Sett may be used by a number of badgers/families may use more than one sett;	[1]		
6	(a)	Green with white (edge/described);	[1]	10
	(b)	(i) Left in dark/cupboard; [1] 48 hours; [1]	[2]	
		(ii) Ensure no starch present in leaf at start of experiment/fair test	[1]	
	(c)	(i) Iodine;	[1]	
		(ii) A – Blue/black; [1] B – Yellow/brown; [1]	[2]	
		(iii) No colour change/No starch present in C; [1]  Any <b>two</b> : [2] No photosynthesis; No chlorophyll present; To trap light;	[3]	
7	(a)	Woodlice may use up/run out of oxygen/lack of oxygen [1]; woodlice die; [1]	[2]	6
	(b)	Carbon dioxide <b>produced</b> /by woodlice respiration;	[1]	
	(c)	Same volume of limewater/indicator drawn; labelled; N.B. No woodlice drawn	[2]	
	(d)	Movement/heat/growth/reproduction;	[1]	

			AVAILABLE MARKS	
8	(a)	20 × 3 × 4.2; [1] 252; [1]	[2]	
	(b)	Mass of crisp;	[1]	
	(c)	Any <b>two</b> from: Crisp doesn't all burn; Some heat lost to air/tube/needle; Temp/mass/volume not measured accurately;	[2]	
	(d)	Oxygen/O; [1] Carbon/C; [1]	[2]	
	(e)	(i) Energy requirement increases with age; [1] Energy needed for growth/older boy has more muscles which use more energy; [1]	[2]	
		(ii) Any <b>two</b> from: Gender; Activity/manual work; Pregnancy;	[2]	11
9	(a)	Quadrat;	[1]	
	(b)	Ensure sample unbiased/make it a fair test/representative;	[1]	
	(c)	Count/average the number of daisies <b>per</b> quadrat; [1] Multiply the number per quadrat by 4; [1]	[2]	4
10	(a)	Dissolves in/combines/reacts; with water [in clouds]/water vapour;	[2]	
	(b)	Defoliates trees (which then die)/acidifies lakes so animals die;	[1]	
	(c)	Sulfur dioxide emissions decrease; Burning less coal/smokeless zones/laws enforced to reduce emissions/ catalytic converters in cars/low sulfur fuels/burn less fossil fuels/increased use of renewable energy;	[2]	5
11	(a)	<b>A</b> – retina; [1] Contains light sensitive cells; [1] <b>B</b> – vitreous humour; [1] Maintains shape of eyeball; [1]	[4]	
	(b)	Focus/bend/refract light on to retina;	[1]	5

## 12 Indicative Content

- (Less trees/less plants so) less photosynthesis;
- Less CO<sub>2</sub> used by plants/less CO<sub>2</sub> absorbed from atmosphere;
- Combustion/burning produces/releases CO<sub>2</sub> into atmosphere;
- Overall CO<sub>2</sub> in atmosphere increases;
- (Increased atmospheric CO<sub>2</sub> linked to) global warming/increased temperature;
- Irregular weather pattern;
- Ice caps melt/flooding/sea levels rise;
- loss of habitat/species

**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 to describe and explain their conclusions <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 to describe and explain their conclusions <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 standard</b> .	[3]–[4]
C	Candidates make <b>little use of specialist terms</b> throughout to describe and explain their conclusions <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**