



Rewarding Learning

**General Certificate of Secondary Education
2015**

Biology

Unit 1

Foundation Tier

[GBY11]

FRIDAY 5 JUNE, AFTERNOON

**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)	B; C; D;	[1] [1] [1] [3]	4
	(b)	Cellulose cell walls/leaves/roots	[1]	
2	(a)	Carbon (C)/Hydrogen (H)/Oxygen (O);	[1]	4
	(b)	Potato → Carbohydrate;	[1]	
		Butter → Fat; Chicken → Protein;	[1] [1] [3]	
3	(a)	(i) (Population) increases/rises;	[1]	6
		(ii) Birth rate greater (than death rate);	[1]	
	(b)	(i) Decreases;	[1]	
		(ii) Any two from: Lack of food/competition for food; Predation; Cold temperatures; Disease;	[2]	
			(iii) Dies out/becomes extinct/declines to zero;	

4 Indicative content

1. Boil leaf in water;
2. Kills leaf;
3. Boil leaf in ethanol;
4. To remove chlorophyll/decolourise;
5. Dip/place leaf in water;
6. Soften leaf;
7. Add iodine to leaf;
8. Turns blue-black shows starch/photosynthesis has taken place;
9. Heat ethanol in waterbath as ethanol flammable/Bunsen turned off;

Response	Marks
Candidates must use appropriate, specialist terms throughout to describe and explain how a leaf is tested for starch using at least FIVE of the above points . They use good spelling, punctuation and grammar and the form and style are of a high standard .	[5]–[6]
Candidates use some appropriate, specialist terms throughout to describe and explain how a leaf is tested for starch using at least THREE of the above points . They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
Candidates make little use of specialist terms throughout to describe and explain how a leaf is tested for starch using at least ONE of the above points . The spelling, punctuation and grammar, form and style are of a limited standard.	[1]–[2]
Response not worthy of credit.	[0]

[6]

6

5 (a) A – cell wall;

[1]

(b) (i) 80 (mm);

[1]

(ii) $80 \div 200$; Accept ECT using candidate's answer from (b)(i) $\div 200$

[1]

= 0.4 (mm); Accept correct computation using candidate's answer from (b)(i)

[1]

[2]

(c) Smaller;

[1]

(d) Any **two** from:

Non-cellulose cell wall;

No nucleus/has loop of DNA;

Plasmids; (accept converse for onion cell)

[2]

(e) Bacterium/bacterial;

[1]

8

			AVAILABLE MARKS			
6	(a)	(i) A – colon; B – ileum;	[1] [1]	[2]	10	
		(ii) G on stomach/correct use of line labelled G		[1]		
	(b)	(iii) Acid; protease;	[1] [1]	[2]		
		(i) Liver;		[1]		
		(ii) Water;		[1]		
	(iii) Fat digested faster when bile present;		[1]			
	(iv) (Large fat droplets) broken down into smaller droplets ; Reject broken down (uq)		[1]			
	(v) Increases surface area (for enzyme/lipase to act);		[1]			
7	(a)	(i) Nervous – Electrical; Hormonal – Chemical;	[1] [1]	[2]		10
		(ii) Nervous system faster than hormonal;		[1]		
	(b)	(i) Distance (ruler drops);		[1]		
		(ii) Any one from: Arm rested on bench; Ruler held between finger and thumb; Same (weight of) ruler used;		[1]		
		(iii) Pupil A;		[1]		
		(iv) Pupil B;		[1]		
		(v) Reactions did improve with practice; Third test faster/shorter distance than first; Suitable values from table (e.g. 150 v 85);	[1] [1] [1]	[3]		

			AVAILABLE MARKS			
8	(a)	A – Photosynthesis;	[1]	[2]		
		B – Respiration;	[1]			
	(b)	(i)	Accurate plots × 2	[2]		[3]
			Line;	[1]		
		(ii)	Beech (decompose faster);	[1]		[3]
After 300 days only 30% of beech remained;			[1]			
Compared to 50% of holly;			[1]			
(iii)	Saprophytes;		[1]			
(iv)	Bacteria;		[1]			
(v)	Humus;		[1]	11		
9	(a)	Plants grow from growing points/apices;	[1]	[3]		
		Produce/in branching pattern;	[1]			
		Animals grow all over;	[1]			
	(b)	<i>Digestive system</i> – (Organ) system;	[1]	[2]	5	
<i>Eye</i> – Organ;	[1]					
10	(a)	Trachea;	[1]	[2]		
		Diaphragm;	[1]			
	(b)	<i>Description</i> – Balloons deflate/described;	[1]	[3]	5	
		<i>Explanation</i> – Reduced volume;	[1]			
Increased pressure/forces air out;	[1]					
11	(a)	(i)	Sweep/wave/drag back and forth (side to side/figure of eight);	[1]	[2]	
			Through/over the long grass;	[1]		
	(ii)	Any two from:		[2]		
		Same net/size of net/mesh;				
		Sweep net same length of time;				
	Same day/time of day;					
	Same size of area;		[2]			
(b)	Pitfall trap;		[1]	5		

12 Indicative content

1. Sugar/glucose present;
2. Benedict's solution changes from blue to brick red;
3. Fats/lipids present;
4. Ethanol changes from clear to white (emulsion);
5. Starch present;
6. Iodine changes from yellow/brown to blue/black;
7. Protein absent;
8. No colour change in Biuret;

Response	Marks
Candidates must use appropriate, specialist terms throughout to describe and explain their conclusions using at least SIX of the points . They use good spelling, punctuation and grammar and the form and style are of a high standard .	[5]–[6]
Candidates use some appropriate, specialist terms throughout to describe and explain their conclusions using at least FOUR of the points . They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
Candidates make little use of specialist terms throughout to describe and explain their conclusions using at least TWO of the points . The spelling, punctuation and grammar, form and style are of a limited standard.	[1]–[2]
Response not worthy of credit.	[0]

[6]

6

Total**80**AVAILABLE
MARKS