Rewarding Learning

General Certificate of Secondary Education
2019

Biology

Unit 1

Foundation Tier

[GBL11]

FRIDAY 24 MAY, 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)**	Cabbage;	[1]	
	(b)	Circle drawn around thrush/fox/buzzard; *allow if 2 or 3 correct/or if circle correct word*	[1]	
	(c)	4;	[1]	
	(d)	Cabbage, thrush; Arrows drawn;	[2]	5
2	**(a)**	**A** – Cell membrane; **B** – Nucleus; **C** – Cytoplasm;	[3]	
	(b)	Any **two** from: Plasmid/cell wall/loop/strand/string of DNA/circle of DNA circular chromosome;	[2]	5
3	**(a)**	Tube **A** – Trachea; Tube **B** – Bronchus;	[2]	
	(b)	**(i)** Muscle **C** – Diaphragm	[1]	
		(ii) Contracts; Moves down/flattens;	[2]	5
4	**(a)**	Palisade layer;	[1]	
	(b)	Chloroplasts present; Larger vacuole; *accept converse if B stated*	[2]	
	(c)	Carbon dioxide/CO_2; Water; H_2O Sugar/glucose;	[3]	
	(d)	Arrow drawn out of stomata; *must be between guard cell*	[1]	7
5	**(a)**	A – glucose; B – lactose; C – cellulose; D – glycogen; E – starch;	[5]	

				AVAILABLE MARKS
	(b)	*Lines drawn to connect:* Protein → amino acids; *one line only to amino acids* Fat → glycerol; Fat → fatty acids; *fat → glycerol + fatty acids + one other [1]* *fat → glycerol + fatty acid + two other [0]*	[3]	8
6	**(a)**	A – brain; B – spinal cord/spinal nerve ***Reject:** spine*	[2]	
	(b)	Receptor; Response/reflex;	[2]	
	(c)	Any **two** from: N – electrical impulse, H – chemical signal; N – travels in nerves, H – travels in blood; N – fast/rapid/faster/immediate, H – slow/slower; N – short duration/shorter time, H – long lasting; ***Need** nerve point + **appropriate** hormone point for each mark* *Need both nerve point and hormone point for [1] or a comparison, e.g. nerve faster/nerve shorter time*	[2]	6
7	**(a)**	Bacteria; Fungi;	[2]	
	(b)	**(i)** 15 ÷ 2; 7.5; *7.5 with no workings [2]*	[2]	
		(ii) Allow earthworms in; **More** decomposition/faster/increased decomposition/more decay;	[2]	
		(iii) Temperature/heat;	[1]	7
8	**(a)**	Large/insoluble molecules broken down; broken down into small/more soluble molecules; So they can pass **into the blood**/diffuse into blood;	[3]	
	(b)	**(i)** Villi/villus;	[1]	
		(ii) Increase surface area/more/larger surface area;	[1]	
		(iii) Allow substances to pass through/diffuse through/enters blood/absorb;	[1]	
		(iv) Blood vessels nearby/good blood supply/long/microvilli;	[1]	7

9 **(a)** Homeostasis; [1]

(b) **Indicative Content**

1. Gained/taken in as water in food and drinks;
2. **Produced** in respiration;
3. Lost during breathing/breathing out/exhaling;
4. Lost as sweat/tears;
5. Lost as urine/urea/urination/urinating/excretion;
6. Faeces/egestion/diarrhoea/vomiting;
7. Kidney;

Band	Response	Mark
A	Candidates **must use appropriate, specialist terms** throughout to describe and explain their conclusions **using <u>at least 5</u> of the points**. 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** throughout to describe and explain their conclusions **using <u>at least 3</u> of the points**. They use **satisfactory** spelling, punctuation and grammar and the form and style are of a **satisfactory** standard.	[3]–[4]
C	Candidates make **little use of specialist terms** throughout to describe and explain their conclusions **using <u>at least 1</u> of the points**. The spelling, punctuation and grammar, form and style are of a **limited** standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6] 7

10 **(a)** **(i)** 5 + 12 + 18 + 20;
= 55; [2]

(ii) 20 ÷ 55 = 0.3636;
0.3636 × 100 = 36.4%; [2]

(b) More/increased photosynthesis;
Photosynthesis requires/takes in carbon dioxide;
More required once only [2]

(c) Increased diversity/better biodiversity/positively affects biodiversity;
increased habitat (/example described)/more food for other organisms (/example described); [2] 8

AVAILABLE MARKS

			AVAILABLE MARKS
11	**(a)**	29 ÷ 100; = 0.29; [2]	
	(b)	Accurate plots ([1] × 2); *ignore 20 week plot* Straight lines drawn through the plotted points; [3]	
	(c)	Mass of wheat crop increases as the mass of weeds decreases/inverse relationship; *Insist on wheat as dependent variable.* *Accept: converse; mass of wheat decreases as the mass of weeds increases; more weeds less wheat; less weeds more wheat; fewer weeds means more wheat; the less time weeds kept clear of plots the lower the mass of wheat;* [1]	
	(d)	Any **two** from: light/sun/sunlight; space/soil; water/moisture/rain; minerals/named example/nitrates/N/P/K/Mg/Ca; carbon dioxide; ***Reject:*** *temperature* [2]	
	(e)	Plot C/clear of weeds for 10 weeks; Mass of wheat is lower than the expected trend; [2]	10
		Total	**75**