Rewarding Learning

General Certificate of Secondary Education
2018

Biology

Unit 1

Foundation Tier

[GBY11]

FRIDAY 8 JUNE, 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)**	Lines drawn to connect Vitamin C → DCPIP Protein → Biuret Fat → ethanol (Any **two** correct answers)	[2]	
	(b)	Add Benedict's reagent; Boil/heat; Colour change (from blue) to brick red (Any **two**)	[2]	4
2	**(a)**	Hair;	[1]	
	(b)	Calcium;	[1]	
	(c)	Soluble;	[1]	
	(d)	Humus;	[1]	4
3	**(a)**	A – combustion; B – photosynthesis; C – respiration;	[3]	
	(b)	Death; [1] Egestion/faeces/excretion/urine; [1] Decomposition; [1] Absorption of decomposed products (by fungi); [1] (Any **three**)	[3]	6
4	**(a)**	A C D E B	[4]	
	(b)	**(i)** Bacterial cell wall has no cellulose;	[1]	
		(ii) Fungi;	[1]	6
5	**(a)**	**(i)** Stain/make cells **more** visible;	[1]	
		(ii) Avoid air bubbles;	[1]	
		(iii) Focus/adjust light/clean lens;	[1]	
	(b)	**(i)** 60 ÷ 100; 0.6 (mm);	[2]	
		(ii) Count/estimate the number of chloroplasts along length of cell; Divide length of cell by number of chloroplasts; or Measure the length of a chloroplast; Divide length (of chloroplast) by 100;	[2]	7

					AVAILABLE MARKS
6	**(a)**		Kills leaf/stops chemical reactions/removes cuticle; Remove chlorophyll; Rinse in water;	[3]	
	(b)		Wear safety goggles; Turn off Bunsen/no naked flame;	[2]	
	(c)	**(i)**	Green part – blue/black; White part – orange/brown;	[2]	
		(ii)	White area has no chlorophyll; No photosynthesis; No starch;	[3]	10
7	**(a)**	**(i)**	Drawn to connect duodenum to colon; Continuous tube, narrower and longer than colon;	[2]	
		(ii)	A – Stomach; B – pancreas; C – duodenum;	[3]	
	(b)	**(i)**	Liver;	[1]	
		(ii)	Emulsification;	[1]	
		(iii)	Larger surface area/broken down into smaller pieces; For lipase enzyme to work;	[2]	9
8	**(a)**		Quadrat;	[1]	
	(b)		72; 20;	[2]	
	(c)	**(i)**	Abiotic;	[1]	
		(ii)	Light meter/lux meter;	[1]	
	(d)		Accurate plots [2] (allow ECT); Plots in correct sequence, last three slots of position 5;	[3]	
	(e)	**(i)**	Position 4; 4 different species/grass, bluebell/daisy and moss all present;	[2]	
		(ii)	Highest light and soil moisture levels; Light = 14 (au), moisture = 12 (au);	[2]	
	(f)		Biodiversity;	[1]	13

					AVAILABLE MARKS
9	**(a)**	**(i)**	Phototropism;	[1]	
		(ii)	Auxin;	[1]	
		(iii)	Uneven distribution of hormone/described; Differential growth of **cells**/described;	[2]	
	(b)		Any **one** from: Rooting powder Weed killer Tissue culture Stimulation of flowering Fruit formation	[1]	5
10	**(a)**		Foxes, hawks; Frogs, thrushes; Rabbits, slugs; } [1] mark for each horizontal line.	[3]	
	(b)		Make own food/photosynthesis; [1] Provide food for other animals in web; [1]	[2]	5
11	**(a)**		2 layers of cells drawn, upper palisade longer than lower; Upper palisade – 4/5 cells in each row, tightly packed with no large air spaces; Lower palisade – 4–6 cells, shape representative, 1–2 air spaces;	[3]	
	(b)		Correct labels (× 2);	[2]	5

12 Indicative Content

- Age;
- 5-year-old girl needs 8000 kJ, teenage girl needs 12 000 kJ;
- Gender;
- Teenage boy needs 16 000 kJ, teenage girl needs 12 000 kJ/man doing light work needs 13 800 kJ, woman doing light work needs 11 800 kJ;
- Activity;
- Man doing light work needs 13 800 kJ, man doing heavy work needs 20 000 kJ;

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] 6

Total **80**

AVAILABLE MARKS