Rewarding Learning

General Certificate of Secondary Education
2017–2018

Science: Single Award

Unit 1 (Biology)

Foundation Tier

[GSS11]

WEDNESDAY 21 FEBRUARY 2018, 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)**	Dandelion – producer [1] Grasshopper – primary consumer [1] [2]	
	(b)	Direction of energy flow [1]	3
2	**(a)**	**(i)**	

Name	Letter
oviduct	C [1]
uterus	D [1]
vagina	E [1]

[3]

	(ii)	E [1] C [1] [2]	
	(b)	**(i)** Condom ——— forms a barrier to stop sperm entering the female [1] vasectomy ——— the sperm tubes are cut [1] [2]	
		(ii) Sterilisation [1]	8
3	**(a)**	**(i)** 70 [1]	
		(ii) 140 – 70 = 70 [1] 70 ÷ 140 × 100 = 50% [1] [2]	
		(iii) Many groups [1]	
	(b)	**(i)** Salt/(saturated) fat [1]	
		(ii) Too little exercise/stress/smoking [1]	6
4	**(a)**	Clinical testing [1]	
	(b)	Advantage – not testing on humans at this stage/testing on live organism [1] Disadvantage – animals are a different species to humans/ethical issues [1] [2]	3
5	**(a)**	60 [1]	
	(b)	All 6 plots correct [2] 5 plots correct [1] line complete and straight points between plots [1] [3]	
	(c)	There is greater competition at higher (planting) densities [1] for light/space/nutrients/water [1] [2]	
	(d)	As number of seedlings increase up to 15, total mass increases [1] at higher densities total mass decreases [1] (as number of seedlings rise, total mass rises then falls = 1) [2]	
	(e)	The seedlings would die/would have very low masses [1]	9

					AVAILABLE MARKS
6	(a)		Hh [1] tall [1]	[2]	
	(b)		Heterozygous	[1]	3
7	(a)	(i)	Meal taken/or named example of food/drink [1] containing carbohydrate/named carbohydrate [1]	[2]	
		(ii)	Glycogen [1] liver [1]	[2]	
	(b)	(i)	Any **two** from: • cost of equipment to monitor blood glucose levels • many people affected/can have diabetes for a long period of time • treatment of complications	[2]	
		(ii)	Eye damage/blindness/kidney failure/heart disease/strokes	[1]	
		(iii)	Type 1 occurs early in life/type 1 not linked to lifestyle/type 1 treated by insulin/with type 1 insulin not produced (or converse)	[1]	8
8	(a)	(i)	Layer A is closer to the light [1] has more chloroplasts [1]	[2]	
		(ii)	Carbon dioxide	[1]	
	(b)		Glucose/sugar/starch [1] oxygen [1]	[2]	5
9	(a)	(i)	To avoid getting the disease	[1]	
		(ii)	The (antigens on the microbes) in the vaccination cause the production of antibodies [1] these remain at a high enough level in the body/or can be produced quickly enough if infection by same microbe occurs [1] these antibodies latch on to the microbes [1]	[3]	
	(b)	(i)	Less able to fight infection/are weaker	[1]	
		(ii)	Causes less harm	[1]	
	(c)	(i)	People think there is a link with autism	[1]	
		(ii)	The uptake of vaccination in Swansea was so low [1] and therefore were not protected against measles [1]	[2]	9

10 Indicative content

- carbon dioxide in the atmosphere
- is increasing
- traps heat
- caused by increased combustion of fossil fuels
- and deforestation
- method of reducing the rate of temperature rise, e.g. reducing use of fossil fuels/reforestation
- decreasing ice fields/water levels/climate change explained

Band	Response	Mark
A	Candidates must use appropriate specialist terms throughout to describe global warming using **six or seven** of the points above, in a logical sequence. 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 to describe global warming using **four or five** of the points above, in a logical sequence. They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3]–[4]
C	Candidates partially describe global warming using **one to three** of the above points. However, these are not presented in a logical sequence. They use limited spelling, punctuation and grammar and have made limited use of specialist terms. The form and style are of a limited standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6] 6

Total **60**

AVAILABLE MARKS