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Rewarding Learning

General Certificate of Secondary Education
2013–2014

Science: Single Award

Unit 1 (Biology)

Foundation Tier

[GSS11]

TUESDAY 13 MAY 2014, MORNING

MARK SCHEME

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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.

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AVAILABLE MARKS

1 (a) (i)

Name	Letter
Ovary	A [1]
Cervix	C [1]
Oviduct	B [1]

[3]

(ii) X placed in the uterus [1]

(b) (i)

Method	How method prevents pregnancy
 Contraceptive pills	Stops sperm entering female
	Stops the baby growing
 Condom	Changes the hormone levels in females and prevents an egg being released

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Each line correct [1] [2]

(ii) Condom [1]

(iii) Sperm tubes [1] 8

2 (a) (i) Energy flow [1]

(ii) Sunlight/sun [1]

(b) (i) Can fly or move away [1]

(ii) Foxes go down, small birds go up [1]

(iii) Fewer foxes to eat them/less birds being eaten [1] 5

3 (a) Mental [1]
cocaine [1]
relaxed [1] [3]

(b) (i) Drinking a lot of alcohol over a short period of time [1]

(ii) Violence/crime/unemployment/relationships breakdown/days off work [1]

(iii) Mark is suffering from peer pressure/needs to drink alcohol to lose his inhibitions [1]
Anna has high esteem/understands that alcohol can be harmful [1] [2] 7

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			AVAILABLE MARKS
4	(a)	Cholesterol [1]	
	(b)	A blood clot forms and stops blood/oxygen/glucose (reaching the heart muscle) [1] respiration cannot take place/heart cells die/heart stops beating/person has a heart attack [1] [2]	
	(c) (i)	Reducing stress/stopping smoking [1]	
	(ii)	Any **two** from: • kidney damage • circulatory problems (e.g. heart disease/amputation/stroke) • eyesight problems/blindness • other appropriate response [2]	
	(iii)	Any **two** from: • high number of patients affected/more people with diabetes • cost of (producing) insulin/insulin needed every day/a lot of insulin is used • long term effect named and explanation of cost • lasts a long time/get it for life [2]	8
5	(a)	**A** = Walking catfish **B** = Flathead catfish **C** = Blue catfish All three correct = [2]; one or two correct = [1] [2]	
	(b) (i)	It can breathe air, allowing it to survive out of water [1] can use its (spiny front) fins to move from wetland to wetland [1] [2]	
	(ii)	Non-native/introduced by man [1] more successful than native species [1] [2]	6
6	(a)	All points correct [2] 1 error [1] more than 1 error [0] line joined between points [1] [3]	
	(b) (i)	Oxygen [1]	
	(ii)	The number of bubbles/oxygen given off decreases with distance from lamp [1] reduced photosynthesis [1] due to reduced light intensity [1] [3]	
	(c)	Phototropism [1]	8
7	(a)	Group 1 = 24 [1] Group 2 = 44 [1] [2]	
	(b)	The test tube in the apparatus set up by Group 2 is not insulated or converse [1] so a lot of heat is lost out into the room or converse [1] [2]	4

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				AVAILABLE MARKS
8	(a)	(i)	Any **two** from: • the number of people (males and females) with skin cancer has increased (every year) from 1975/over time • the number of females with skin cancer is (always) higher than the number of males • in 2010 the rates of skin cancer cases in both males and females is the same • when the rate of skin cancer cases rises in females it also rises in males [2]	
		(ii)	Rates will decrease [1] Less exposure to UV rays [1] [2]	
	(b)	(i)	Any **two** from: • risk of Down Syndrome increases with age • under 35 risk of miscarriage exceeds that of Down Syndrome • over 35 risk of Down Syndrome greater than miscarriage [2]	
		(ii)	Religious conviction/not wishing to have ethical decision to make/ if other children in family/other appropriate response [1]	
	(c)		Mutation [1]	8

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9 Indicative content

- in vitro testing medicines or drugs are developed in the laboratory/tested on cells/tissues
- does the drug work
- animal testing is testing on live animals/whole body systems/before testing on humans
- many people are opposed to animal testing for ethical reasons – explained
- a drug may have different effect on animal as on a human (due to humans being a different species)
- drugs are given to humans in clinical trials
- to see if the drug works on humans/what the required dose will be/if there are any side effects
- licensed for use when medicines or drugs are shown to be effective/safe (with no or limited side effects)

Band	Response	Mark
A	Candidates must use appropriate terms throughout to describe what stages this new antibiotic would have to go through before it could safely be given to humans using **six to eight** of the points above. 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 what stages this new antibiotic would have to go through before it could safely be given to humans using **three to five** of the points above. They use satisfactory spelling, punctuation and grammar and the form and style are of a satisfactory standard.	[3–4]
C	Candidates use **one to two** of the points above. They use limited spelling, punctuation and grammar to describe what stages this new antibiotic would have to go through before it could safely be given to humans. They 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