



Rewarding Learning

**General Certificate of Secondary Education
2024–2025**

**Single Award Science:
Biology**

Unit 1

Foundation Tier

[GSA11]

TUESDAY 13 MAY 2025, AFTERNOON

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for GCSE Single Award Science

Candidates must:

- AO1** Demonstrate knowledge and understanding of scientific ideas, scientific techniques and procedures;
- AO2** Apply knowledge, skills and understanding of scientific ideas, scientific enquiry, techniques and procedures; and
- AO3** Analyse information and ideas to interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures.

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Marking Calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Types of mark schemes

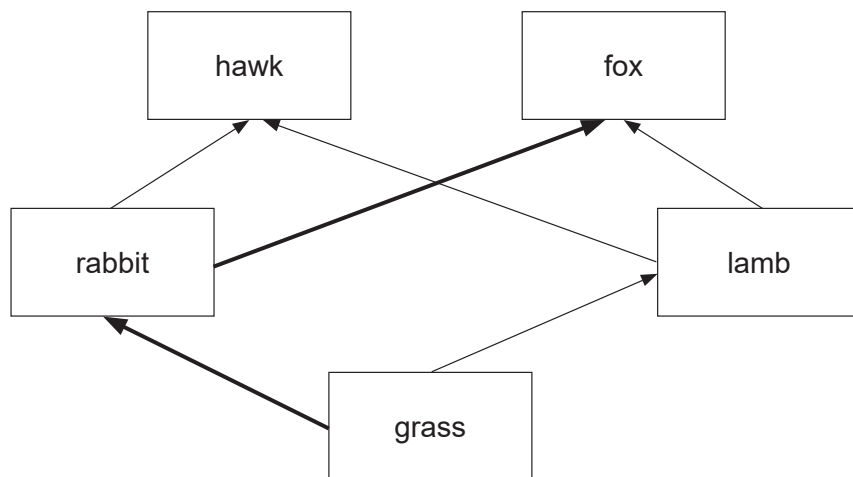
Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Where one response is required to gain a mark, candidates will not gain credit if a correct response is given alongside one or more incorrect responses. This is referred to as listing.

1 (a) (i) Grass [1]

(ii) Sun/sunlight [1]

(b)



[1]

(c) Decrease [1]
more [1]

[2]

5

2 (a) (i) Nucleus [1]

(ii) provides support to the cell

contains cell sap

control centre of the cell

[1]

(iii) Cell wall/vacuole [1]

(b) (i) Testes/testis [1]

(ii) Ovary [1]

(iii) Condom/vasectomy [1]

6

3 (a) (i) 29 [1]

(ii) 15 [1]

(b) (i) small [1] in between [1] [2]

(ii) Tongue rolling/hand dominance [1]

5

			AVAILABLE MARKS
4	(a) (i)	4 correct points plotted correctly [2] (3 points plotted correctly [1]) (less than 3 points plotted correctly [0]) Straight lines joining the points [1]	[3]
	(ii)	(As the years increase) the number of deaths linked to alcohol increases	[1]
	(b)	Drinking a large [1] amount of alcohol in a short [1] period of time	[2]
	(c) (i)	Iodine	[1]
5	(ii)	Yellow-brown [1] to blue-black [1]	[2]
	(a)	D B C A (Any two in the correct order [1])	[2]
	(b) (i)	94 (bpm)	[1]
	(ii)	Any one from: The pulse rates of pupil X: • are lower than pupil Y • go up slower than pupil Y • peak lower than pupil Y (allow converse) (comparison required)	[1]
	(c)	Glucose [1] carbon dioxide [1]	[2]
6	(a) (i)	(Alexander) Fleming	[1]
	(ii)	Bacteria	[1]
	(b) (i)	(Filter paper disc) C [1] largest clear area/killed the most (microorganisms/bacteria) [1] (comparison required)	[2]
	(ii)	(Filter paper disc) A [1] did not kill/have any effect (on the microorganisms/bacteria) [1]	[2]
	(iii)	Any one from: • (filter paper discs were) left for the same length of time • (filter paper discs were) left at the same temperature • same size filter paper discs • same microorganism used	[1]
	(c)	In vitro testing [1] clinical trials [1]	[2]
			9

7	(a) Uncontrolled cell division	[1]	AVAILABLE MARKS
	(b) Any two from: (Cancer cells) have a larger nucleus (comparison required) (cancer cells) are smaller (comparison required) (cancer cells) are irregularly arranged (cancer cells) can move into the blood/more (cancer cells)	[2]	
	(c) Malignant because it is spreading through the body in the bloodstream	[1]	
	(d) UV/ultraviolet rays	[1]	
			5
8	(a) As the planting density increases, the average number of tomatoes on each plant decreases [1]		
	due to competition [1] for water/space/light/minerals etc [1] (or converse) [3]		
	(b) (i) $160 - 120 = 40$ [1]		
	$40/120 \times 100 = 33.3\%$ [1]	[2]	
	(ii) More sunlight/chlorophyll [1] for more photosynthesis [1]	[2]	
			7

- 9 (a) Any **two** from:
- chemical messenger
 - travels in the blood
 - to a target organ
 - produced by a gland

[2]

(b) **Indicative content**

- pancreas
- liver
- increased uptake of glucose
- conversion of glucose to glycogen
- increased respiration
- lowers blood glucose level
- diabetes

Band	Response	Mark
A	Candidates must use appropriate specialist terms throughout to describe and explain the effect of insulin on blood glucose levels in the body using five or more 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 and explain the effect of insulin on blood glucose levels in the body using three or four 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 describe and explain the effect of insulin on blood glucose levels in the body using one or two of the above points. However, these are not presented in a logical sequence. They use limited spelling, punctuation and grammar and the form and style are of a limited standard.	[1]–[2]
D	Response not worthy of credit.	[0]

[6]

Total

AVAILABLE
MARKS

8

60