



Rewarding Learning

General Certificate of Secondary Education

Biology

Unit 1

Foundation Tier

[GBL11]

Assessment

**MARK
SCHEME**

General Marking Instructions

The main purpose of the mark scheme is to ensure that each question is marked accurately, consistently and fairly.

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which students may produce. In the event of unanticipated answers, teachers and lecturers are expected to use their professional judgement to assess the validity of answers.

Mark Scheme Annotation

- The use of a solidus (/) denotes alternative answers which can be awarded within the same question (or marking point in a question worth more than one mark).
- The use of a semi-colon (;) denotes separate marking points. These are particularly relevant when separating the different marking points in a question worth more than one mark.
- Part of an answer within brackets indicates that this part is not essential to gain credit – the bracketed section is usually to set context or for the purpose of completeness.
- Some answers are shown as 'Any **two** from' (or any number between two and six). This means that any two (or other specified number) answers from the bullet-pointed list can be credited in this question or question part.

Marking Calculations

Full marks are normally awarded for the correct answer – irrespective of whether working out has been shown (even when asked to show working out.) The principle of 'error carried forward' (ECF) usually applies in that if a student makes a mistake in the first part of a three-mark, three-stage calculation then the final two marks can be awarded if the second and third stage processes are carried out correctly. The same principle applies to a mistake at any stage in a calculation.

Marking QWC question

See guidance in the mark scheme at the QWC question and also the section in the subject-specific guidance.

		AVAILABLE MARKS
1	Iodine (solution); glucose; blue; purple/lilac;	[4] 4
2	Photosynthesis; Carbon dioxide/CO ₂ ; Oxygen; Light; Chlorophyll; Starch;	[6] 6
3	<p>(a) (i) Tubes drawn connecting ureters and bladder;</p> <p style="padding-left: 20px;">(ii) Ureters;</p> <p>(b) A – Medulla; B – Pelvis; C – Urethra;</p>	<p>[1]</p> <p>[1]</p> <p>[3] 5</p>

4 Indicative Content

AVAILABLE
MARKS

Similarities:

- Both have cell wall;
- Both have cytoplasm;
- Both have cell membrane;
- Both have genetic material/DNA

Differences:

- Bacteria cell has no chloroplasts; plant cells do;
 - Bacteria cell has plasmids, plant cells don't;
 - Bacteria cell wall is non-cellulose, plant cell is cellulose;
 - Bacteria cell has circular chromosome, plant cell has a nucleus;
 - Bacteria cell has no vacuole, plant cell has a vacuole;
- (accept converse)

Need at least 2 similarities or differences and a comparison.

Band	Response	Mark
A	Candidates must use appropriate, specialist terms throughout to describe and explain their conclusions using at least 5 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 at least 3 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 at least 1 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

			AVAILABLE MARKS
5	<p>(a) A protein; which is a biological catalyst/speeds up rate of chemical reaction;</p>	[2]	
	<p>(b) (i) 9.7;</p>	[2]	
	<p>(ii) Any three from: B specific to substrate (pectin); Has an active site; Complementary to the substrate; Lock and key;</p>	[3]	
	<p>(c) (i) B produces (8.6 cm³) more;</p>	[1]	
	<p>(ii) Any two from: Too high a temperature would cause the enzyme to become denatured/ reaction too slow at low temperature; to maintain maximum rate of reaction; no limiting factors; optimum temperature;</p>	[2]	10
6	<p>A – Cornea; Function – allows light into eye/refracts light; B – Vitreous humour; Function – helps to maintain shape of eyeball; C – Retina; Function – contains light-sensitive cells;</p>	[6]	6
7	<p>(a) (i) An arrow drawn on right hand side of diagram B pointing to seedling;</p>	[1]	
	<p>(ii) Growth response of plant seedling(s); towards the light;</p>	[2]	
	<p>(iii) Uneven distribution of hormone/more hormone on shaded side/ described; Differential growth/cells grow more on shaded side/described; Auxin;</p>	[3]	
	<p>(b) Foil cap prevents light getting through; even distribution of auxin/ described;</p>	[2]	8

			AVAILABLE MARKS		
8	(a) (i)	Cell body;	[1]		
	(ii)	Insulates the neurone/axon;	[1]		
	(iii)	Any pair: Nucleus in cell body; controls activities of the neurone;			
		Long; nerve impulses transmitted throughout body;			
		Branched ends; connect with other neurones;	[2]		
	(b) (i)	Reflex action is faster; Reflex action does not require conscious thought; (accept converse)	[2]		
	(ii)	Prevents damage to body/described;	[1]		7
9	(a)	Not enough/no insulin produced; To keep blood glucose at normal level;	[2]		
	(b) (i)	Any two pairs: More with Type 1 diabetes; Any data, e.g. 5,836 compared to 17;			
		Type 1 numbers increase up to 14 years; then decrease; Type 2 numbers continually increase; 0 to 558;	[4]		
	(ii)	More exercise; less sugar/fat in the diet;	[2]	8	
10	(a) (i)	Nitrogen;	[1]		
	(ii)	Different diet/different foods eaten by farm animals;	[1]		
	(b)	Chicken; Contains most nitrogen/rice needs most nitrogen;	[2]		
	(c)	Needed to make amino acids/proteins;	[1]	5	

11 (a) 2;	[1]	AVAILABLE MARKS
(b) Small fish;	[1]	
(c) (i) 1600 – 75; = 1525;	[2]	
(ii) Any two from: Excretion, movement, heat/respiration, inedible parts;	[2]	
(d) (i) $(15\,000 \div 90\,000) \times 100$; = 16.66; 16.7;	[3]	
(ii) Not enough energy remaining to support another/5th trophic level;	[1]	
	Total	10
		75