

## GCSE Science - Biology

## B3

Question	Marking details	Marks Available								
1	(a) (i)	2								
	<table border="0"> <thead> <tr> <th>Scientific term</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>ureter</td> <td>fluid leaving the kidney</td> </tr> <tr> <td>urethra</td> <td>tube carrying waste solution out of the body</td> </tr> <tr> <td>urine</td> <td>tube carrying waste solution to the bladder</td> </tr> </tbody> </table> <p>2 (3) correct lines;; 1 correct = 1 mark, 2 correct = 2 marks</p>	Scientific term	Description	ureter	fluid leaving the kidney	urethra	tube carrying waste solution out of the body	urine	tube carrying waste solution to the bladder	
Scientific term	Description									
ureter	fluid leaving the kidney									
urethra	tube carrying waste solution out of the body									
urine	tube carrying waste solution to the bladder									
	(ii) Excretion;	1								
(b)	(i) Ref to same tissue types/ blood types/ family {donor/ member} relative/ same tissue; NOT kidney that is similar	1								
	(ii) (Immune suppressant) drugs/ OWTTE; NOT drugs unqualified/ anti suppressant	1								
(c)	(i) Dialysis;	1								
	(ii) Regular {hospitalisation/treatment} / diet restrictions/ temporary/ every time they have {dialysis/ treatment} several times a week/ not a cure;	1								
	<b>Question 1 total</b>	<b>[7]</b>								

Question	Marking details	Marks Available
2	(a) (i) Cholera + 8 years;	1
	(ii) I 5 000; II ( <i>E coli</i> ) (very) common in humans/ causes serious {illness/ death};	2
	(b) (i) Resistant/ resistance; NOT immune	1
	(ii) Over prescription/ overuse/ giving too many antibiotics/ doctors transferring from patient to patient;	1
	(c) (Antibiotics) do not kill viruses/ only kill bacteria/ to kill an antiviral drug; Accept destroy for kill NOT do not effect/ do not work on bacteria	1
<b>Question 2 total</b>		<b>[6]</b>

Question	Marking details	Marks Available
3	(a) (i) (seen to be) red (hot)/ glows red; NOT hot unqualified/ orange/ white	1
	(ii) (Sterilisation) kills all bacteria/ no bacteria in agar; NOT stops other bacteria getting in	1
	(iii) Count colonies (in D);	1
	(b) (i) 7; 2100; (ecf)	2
	(ii) I UHT II Traditional pasteurised	1
	(iii) Raw;	1
	(iv) Prevent bacterial growth in pasteurised/ UHT contains no bacteria; must refer to one or other of the milks	1
	<b>Question 3 Total</b>	<b>[8]</b>

Question	Marking details	Marks Available
4 (a)	Cuticle; Xylem; Stoma(ta);	3
(b) (i)	Guard (cells);	1
(ii)	Open and close/ change pore size/ control how much water passes out;	1
<b>Question 4 Total</b>		<b>[5]</b>

Question	Marking details	Marks Available
5 (a)	Retina; <u>Optic</u> nerve;	2
(b) (i)	I suitable scale; 0 at origin, linear scale	1
	II all plots correct; $\frac{1}{2}$ small square tolerance 1 error = 1 mark, 2 errors = 0 marks Extrapolation (treat as plotting error – 1)	2
	III line quality; Must use a ruler through centre of plots	1
	(ii) I (level then steady) decrease/ gets smaller;	1
	II 5.9 (from graph); allow ecf from graph	1
(c) (i)	Reflex;	1
	(ii) Protective/ protection/ prevents damage/ prevent hurting the body;	1
<b>Question 5 Total</b>		<b>[10]</b>

Question	Marking details	Marks Available
6/1 (a)	Phloem;	1
(b) (i)	100/ 100.5; Litres/l/dm <sup>3</sup> ; Allow 100 000/ 100 500/ 1 x 10 <sup>5</sup> ; cm <sup>3</sup> / ml; Unit mark can only be given if value mark given	2
(ii)	any two from; same <ul style="list-style-type: none"> <li>• volumes {water/ Topgrow}</li> <li>• light intensity/duration</li> <li>• temperature NOT heat</li> <li>• length of growing time</li> <li>• harvest time</li> <li>• {variety/ type} of tomato</li> <li>• type of soil</li> <li>• pH</li> <li>• height/ mass/age/ stage of growth of plant NOT size</li> </ul> NOT 'amount'/ same {place/ environment}/ CO <sub>2</sub> / 'level'	2
(iii) I	80;	1
II	{lower /smaller} mean mass/{smaller/ lighter} tomatoes;	1
(c)	any two from; phosphate; NOT phosphorus potassium; magnesium; calcium; iron; named trace element	2
<b>Question 6/1 Total</b>		<b>[9]</b>

Question                      Marking details                      Marks Available

7/2 (a) (i)                      4

<b>name of cell</b>	<b>function</b>
given	carry oxygen;
lymphocyte; NOT white blood cell	given
given	<ul style="list-style-type: none"> <li>• Ingest/ take in/ digest/ engulf; NOT eat/ destroy</li> <li>• bacteria/microorganisms/ pathogen/ microbes; NOT disease</li> </ul>
given	(blood) clotting;

(ii) no nucleus/thin in centre/ (bi)concave; NOT doughnut                      2

more light passes through (centre);

*accept* less stain

NOT less haemoglobin in the middle

**Question 7/2 Total**

**[6]**

Question	Marking details	Marks Available
8/3	<p>Any 3 from:</p> <ul style="list-style-type: none"> <li>• Less space required (for a given mass of product);</li> <li>• The product is more predictable;</li> <li>• The product is more reliable;</li> <li>• it is made under controlled conditions (cf farming);</li> <li>• It uses waste from other processes;</li> <li>• It produces less waste/methane;</li> <li>• Not {weather/ climate} dependent;</li> <li>• Continuous production/ produced on demand;</li> <li>• Disease free;</li> </ul> <p>Responses must refer to production, not consumption, eg.</p> <p>Suitable for vegetarians</p> <p>NOT quick/ cheap</p>	3
<b>Question 8/3 Total</b>		<b>[3]</b>



Question	Marking details	Marks Available
9/4	<p><b>Indicative content</b></p> <p>The muscle of the right ventricle contracts and pumps blood through the valves of the pulmonary artery into the lungs. Blood then leaves the lungs, passing into the pulmonary vein, re-entering the heart in the left atrium.</p> <p><b>5-6 marks</b></p> <p>The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.</p> <p><b>3-4 marks</b></p> <p>The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.</p> <p><b>1-2 marks</b></p> <p>The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.</p> <p><b>0 marks</b></p> <p>The candidate does not make any attempt or give a relevant answer worthy of credit</p>	6
<b>Question 9/4 Total</b>	<b>[6]</b>	