OCR
Oxford Cambridge and RSA

GCSE

Biology A

Unit **A163/01**: Module B7 (Foundation Tier)

General Certificate of Secondary Education

Mark Scheme for June 2014

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

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Available in scoris to annotate scripts

BP	Blank Page – this annotation **must** be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
?	indicate uncertainty or ambiguity
BOD	benefit of doubt
CON	contradiction
✗	incorrect response
ECF	error carried forward
⬭	draw attention to particular part of candidate's response
—	draw attention to particular part of candidate's response
~~	draw attention to particular part of candidate's response
NBOD	no benefit of doubt
R	reject
✓	correct response
≀	draw attention to particular part of candidate's response
^	information omitted

1. Subject-specific Marking Instructions

a. If a candidate alters his/her response, examiners should accept the alteration.

b. Crossed out answers should be considered only if no other response has been made. When marking crossed out responses, accept correct answers which are clear and unambiguous.

E.g.

For a one mark question, where ticks in boxes 3 and 4 are required for the mark:

Put ticks (✓) in the two correct boxes.	Put ticks (✓) in the two correct boxes.	Put ticks (✓) in the two correct boxes.
☐	☐	☒
☐	☐	☒
☒	✓	✓
☒	☒	✓
☐	☐	☐
This would be worth 1 mark.	This would be worth 0 marks.	This would be worth 1 mark.

c. The list principle:
If a list of responses greater than the number requested is given, work through the list from the beginning. Award one mark for each correct response, ignore any neutral response, and deduct one mark for any incorrect response, e.g. one which has an error of science. If the number of incorrect responses is equal to or greater than the number of correct responses, no marks are awarded. A neutral response is correct but irrelevant to the question.

d. Marking method for tick boxes:

Always check the additional guidance.

If there is a set of boxes, some of which should be ticked and others left empty, then judge the entire set of boxes.
If there is at least one tick, ignore crosses. If there are no ticks, accept clear, unambiguous indications, e.g. shading or crosses.
Credit should be given for each box correctly ticked. If more boxes are ticked than there are correct answers, then deduct one mark for each additional tick. Candidates cannot score less than zero marks.

E.g. If a question requires candidates to identify a city in England, then in the boxes

Edinburgh	
Manchester	
Paris	
Southampton	

the second and fourth boxes should have ticks (or other clear indication of choice) and the first and third <u>should be blank</u> (or have indication of choice crossed out).

Edinburgh			✓			✓	✓	✓	✓	
Manchester	✓	×	✓	✓	✓				✓	
Paris				✓	✓		✓	✓	✓	
Southampton	✓	×		✓		✓	✓		✓	
Score:	**2**	**2**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**NR**

MARK SCHEME:

Question			CBT Question Numbers	Answer	Mark	Guidance
1	a	i	1ai	155 95;	1	Both required for the mark Units not required
		ii	1aii	<table><tr><th>low</th><th>ideal</th><th>pre-high</th><th>high</th></tr><tr><td></td><td></td><td></td><td>✓</td></tr></table>	1	
	b		1b	27 to 35;	1	
	c		1c	Idea of doing different activities/ exercise / stress / salt / alcohol / smoking;	1	OWTTE **Ignore** medicine / diet / sugar
	d	i	1di	120 (2); 840 / 7;	2	120 = 2 marks
		ii	1dii	Idea of best estimate of true/actual value; OR compare with other data / results /means;	1	**Allow** accurate **value** **Ignore** reference to outliers **Ignore** true **results / accurate results**
		iii	1diii	115; 125;	1	Accept either way round Units not required
		iv	1div	*Idea that blood pressure (systolic) is lower* after answer to part b / between day 1/155 to day 60 / 115 / between start and end / between first 7 days / 142.7 and last 7 days / 120; Ref to diastolic pressure also dropped at same time;	2	ecf for day medicine taken
				Total	**10**	

Question			CBT Question Numbers	Answer	Mark	Guidance
2	a			**[Level 3]** Gives some functions of the skeleton AND details of a joint with more than one tissue or more than one detail about one tissue. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Gives a function of the skeleton AND some detail of one tissue in a joint. OR Gives several functions of the skeleton OR explains the function of several tissues of a joint. Answer includes jobs carried out by the skeleton. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Gives a name of a joint or a function of the skeleton OR function of a tissue in a joint. Answer is mainly a description of the skeleton. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	**This question is targeted at grades up to E** **Indicative scientific points for function of skeleton may include:** • support • protection • movement • produce blood cells **Indicative scientific points for function of tissue in joints may include:** • cartilage reduces friction • ligaments hold joints together • tendons attach muscle to bone • synovial fluid lubricates • Ligaments tough and stretchy • Tendons tough and non-stretchy • Muscles contract **Indicative scientific points for naming a joint** • Ball & socket • Hinge • Named joint e.g. knee, hip etc **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**

Question			CBT Question Numbers	Answer	Mark	Guidance
	b	i		Pain / Tender; Swelling; RICE; Rest, Ice, Compression, Elevation;	4	Accept P.R.I.C.E (Protection …..) / P.R.I.C.E.S./ etc Correct description of RICE (or alternatives) gains two marks
		ii		Any two from: Dislocation; Torn ligament; Torn tendon;	2	
				Total	**12**	

Question			CBT Question Numbers	Answer	Mark	Guidance
3	a			(Increase volume for) more haemoglobin / (carry) more oxygen;	1	Needs idea of more / increased amount Ignore increased surface area
	b			Stops blood / haemoglobin absorbing oxygen; Oxygen not supplied to cells/tissues/organs; Cells/tissues/organs die / cannot respire;	3	Ignore body
				Total	**4**	

Question			CBT Question Numbers	Answer	Mark	Guidance
4				**[Level 3]** Answer to include references to high AND low blood sugar and reference to correct treatment. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Answer to include reference to high / low blood sugar and description of correct treatment. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Answer to include reference to high / low blood sugar OR reference to treatment. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	**This question is targeted at grades up to C** **References to high blood sugar may include:** • occurs after a meal • pancreas produces insulin • insulin lowers glucose • lack of insulin results in high blood sugar that can lead to unconsciousness **References to low blood sugar may include:** • occurs when a meal is missed • low blood sugar can lead to unconsciousness • injected too much insulin **References to treatment may include:** • needs insulin injection • needs sugary drink / injection / food • dietary control (for longer term control) **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**
				Total	6	

Question			CBT Question Numbers	Answer	Mark	Guidance
5	a			Lots of seeds lost / eaten / not many survive; Need to produce enough to replace parents / plants (when they die);	2	
	b	i		Any 2 from 4 Without fertiliser has bigger range / ora; Quotes ranges; (40 with & 80 without or range is 100 – 180 **and** 130 - 170) With fertiliser range towards higher end of seed production; Ranges overlap;	2	
		ii		Plant with most seeds (180) had no fertiliser;	1	'It' refers to no fertiliser
		iii		Any 1 from 2 Higher mean; Lowest seed production from plants without fertiliser;	1	'It' refers to fertiliser ora
		iv		Any two from: Use more plants; Repeat experiment; Use different amounts of fertiliser / use different types of fertiliser;	2	Ignore different types of plants
				Total	**8**	

Question			CBT Question Numbers	Answer	Mark	Guidance
6				**[Level 3]** Answer includes point or points from 3 areas. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Answer includes point or points from 2 areas. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Answer includes point or points from 1 area. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	**This question is targeted at grades up to C** **Predictions may include:** • air bubbles form (in blood) **when surfacing** **Problems may include:** • pain • bends • damage to organs • could prevent blood flow / death **Prevention points may include:** • need to come up slowly • dive for less time • not go as deep **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**
				Total	6	

Question			CBT Question Numbers	Answer	Mark	Guidance
7	a			C before F; F before B; B before A; A before D;	4	(Correct order C F B A D)
	b			Can use herbicide on crop; to kill weeds; Crop not damaged;	3	
				Total	**7**	

Question			CBT Question Numbers	Answer	Mark	Guidance
8	a			<table><tr><td>The output is always greater than the input.</td><td></td></tr><tr><td>The input is always greater than the output.</td><td></td></tr><tr><td>The input and output are always constant.</td><td></td></tr><tr><td>The output from one part of the system becomes the input for another part of the system.</td><td>✓</td></tr></table>	1	
	b			Any 2 from 3 Migration; Loss of nutrients Loss of materials;	2	Ignore references to energy loss e.g. leaching e.g. logging / animal product exports
	c			Any two from: Clean air; Water; Soil; Minerals; Pollination; Fish / game;	2	Accept “food” / “shelter / wood” / “(natural) medicines”
	d			Any two from: Use a quota; Restock; Replant; Don’t use more than is replaced naturally;	2	Ignore ‘will not run out’
				Total	**7**	
				Paper Total	**60**	

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