GCSE

Biology A

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

General Certificate of Secondary Education

Mark Scheme for June 2015

A163/01 **MarkScheme**

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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.

1. Annotations

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

2. Subject-specific Marking Instructions

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

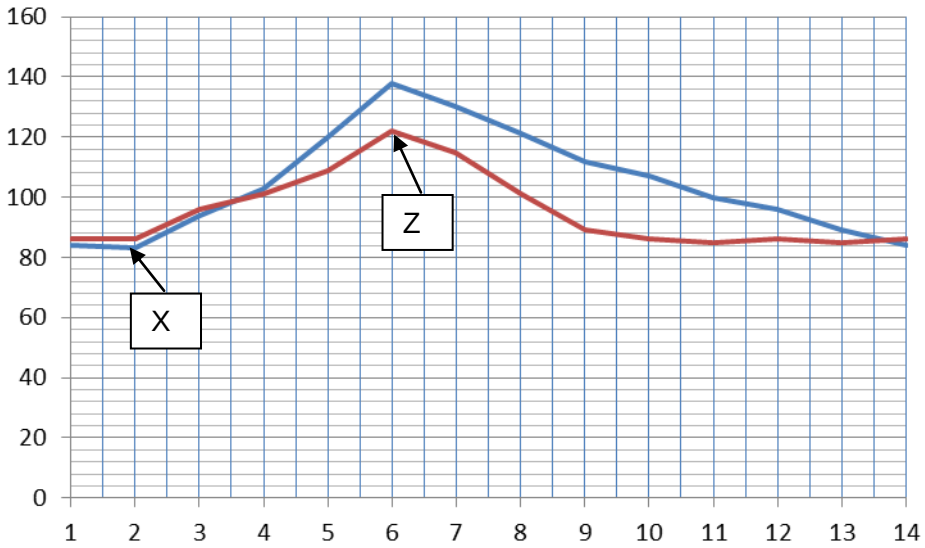
b. Crossed out answers should be considered only if no other response has been made. When marking crossed out responses, accept correct answers which are clear and unambiguous.

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.

Question			Expected Answers	Marks	Additional Guidance
1	a		**[Level 3]** Includes several questions and several reasons for asking them. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Includes some questions and reasons for asking them. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Includes only question 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 up to grade E** **List of questions may include:** • any symptoms • current medication • alcohol consumption • tobacco consumption • level of physical activity • medical history/pregnant/injuries • family medical history • previous treatments • age • gender • BMI/mass/weight **Reasons for asking questions may include:** • to see if person is well enough to train • to prevent making any medical condition worse • to determine level of fitness • to produce an exercise plan/fitness regime • to avoid harm • to see if any other factors may affect the training plan **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**

Question			Expected Answers	Marks	Additional Guidance
	b	i		1	Both correct for 1 mark Arrows/lines/labels within half a square
		ii	4;	1	ecf from b i
		iii	B (does not score) Because it is lower; Because it returns to normal quicker;	2	"A" scores zero marks **Ignore** 'less time to cool down'
			Total	[10]	

Question			Expected Answers	Marks	Additional Guidance
2	a		Fights infection; Clots blood; Transports (dissolved) substances/example of dissolved substance / cells	3	 Idea of transport required not what it contains Ignore oxygen
	b		No <u>nucleus</u>; Concave/bi concave/ large surface area;	2	
	c	i	Pulmonary artery; aorta; Vena cava; pulmonary vein;	3	Any three for 3 marks Do nor credit left aorta
		ii	Stop blood flowing backwards/into atrium;	1	Allow blood flow in one direction
		iii	Idea that blood goes through the **heart twice**; To the lungs and to the body;	2	
		iv	*Any two from* Only one ventricle/ 3 chambers; Blood to body will not contain as much oxygen/not as efficient transport of oxygen; Blood with oxygen mixing with blood without oxygen;	2	
		v	*Any two from* Mechanical valves - better survival rate; Identification of the outlier/anomaly; There is no data after 15 years;	2	ORA
		vi	How many patients were involved in each study; Age; Sex; Lifestyle / example of lifestyle eg drinking or smoking; Medical history; BMI/mass; Fitness;	2	;
			Total	**[17]**	

Question			Expected Answers	Marks	Additional Guidance
3			**[Level 3]** Comments refer to some processes and some ideas. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Comments refer to a process and ideas. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Comments refer only to processes or to ideas. 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 up to grade E** **Ignore any reference to cooling or lowering body temperature.** **Ideas may include:** • cold water causes heat loss • heat less should equal heat gain • heat released from respiration/shivering • thick fat layer • thick fur • basking • vasoconstriction **Process may include:** • brain/hypothalamus monitors (core) body temperature • brain/hypothalamus acts as processing centre • skin sensors monitor external temperature • brain sends impulses to effectors eg muscles • activity increases respiration, increases heat released • lots of insulation (to prevent heat loss) • mentions negative feedback / homeostasis • sun warms / heats seal up • reduces blood flow to surface / less heat lost from blood **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**
			Total	**[6]**	

Question			Expected Answers	Marks	Additional Guidance
4	a		*Any two from* Humans look after young / good survival rate; Cod abandon young / low survival rate; Humans internal fertilisation, cod external;	2	**Accept** (cod) do not look after eggs/young owtte
	b		Food / energy recycled;	1	**Accept** used for energy **Do not accept** reused
	c		*Any one from …* Water; (Fish for) food;	1	**Accept** CO_2 sink
			Total	**[4]**	

Question			Expected Answers	Marks	Additional Guidance
5	a		**Level 3 (5–6 marks)** Answer includes why he is correct AND why he is wrong AND correct explanation of closed loop system. Quality of written communication does not impede communication of the science at this level. **Level 2 (3–4 marks)** Answer includes why he is correct AND why he is wrong OR why correct AND an explanation OR why wrong AND an explanation Quality of written communication partly impedes communication of the science at this level. **Level 1 (1–2 marks)** Answer includes why he is correct, OR why he is wrong OR gives an explanation(s). Quality of written communication impedes communication of the science at this level. **Level 0 (0 marks)** Answer includes some points from basic description. Insufficient or irrelevant science. Answer not worthy of credit.	6	**This question is targeted up to grade C** **relevant scientific points concerning explanation of closed loop may include:** • no waste (from the system) / Waste recycled • output from one part forms input for another part **reasons he may be correct may include:** • Inside a dome • So nothing can enter or leave • Stated examples of waste & output process eg CO_2 from respiration • Stated examples of input & process eg CO_2 for photosynthesis **reasons he may be wrong may include:** • People enter and leave dome • Air will enter / leave when door is open • Other examples of how things could enter or leave eg Watering, fertiliser, replanting **Use the L1, L2, L3 annotations in Scoris; do not use ticks.**
	b		**Any 2 from** Idea that this would be introducing something to the closed loop; Idea that in closed loop predator / prey reach a balance; Idea that predator/prey are food for other organisms	**2**	
			Total	**[8]**	

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