

IGCSE Biology 4437 / 1F

Mark Scheme (Final)

November 2007

IGCSE

IGCSE Biology (4437 / 1F)

General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Question		
1			
	Acceptable Answers	Reject	Mark
	(a) A;		1
	(b) A;		1
	(c) D;		1
	(d) B;		1
	(e) C;		1
	(f) B;		1
	(g) A;		1
	Notes		(10)

Total 10 marks

Question Number	Question		
2	(a)		
	Acceptable Answers	Reject	Mark
	respiration; photosynthesis; feeding;		
	Notes		(3)

Question Number	Question		
2	(b)		
	Acceptable Answers	Reject	Mark
	oxygen / O ₂ ;		
	Notes		(1)

Total 4 marks

Question Number	Question		
3	(a)		
	Acceptable Answers	Reject	Mark
	A = renal artery; B = renal vein; C = ureter;		(3)

Question Number	Question		
3	(b)		
	Acceptable Answers	Reject	Mark
	urine / urea / salts;		(1)

Question Number	Question		
3	(c)		
	Acceptable Answers	Reject	Mark
	(i) Two from: increases / eq.; less ADH; lots of water in the blood; less water reabsorbed;		2
	(ii) Two from: decreases / eq.; more ADH; less water in blood; sweating;		2
			(4)

Total 8 marks

Question Number	Question		
4	(a)		
	Acceptable Answers	Reject	Mark
	Three from: receptor and effector stimulus response ;;;		(3)

Question Number	Question																	
4	(b)																	
	Acceptable Answers		Mark															
	<table border="1"> <thead> <tr> <th>Description</th> <th>Hormones</th> <th>Nerves</th> </tr> </thead> <tbody> <tr> <td>Response is fast</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Response lasts a long time</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Are specialised cells</td> <td>No</td> <td>Yes</td> </tr> <tr> <td>Are carried in blood stream</td> <td>Yes</td> <td>No</td> </tr> </tbody> </table>	Description	Hormones	Nerves	Response is fast	Yes	No	Response lasts a long time	Yes	No	Are specialised cells	No	Yes	Are carried in blood stream	Yes	No		(3)
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Response is fast	Yes	No																
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Question Number	Question		
4	(c)		
	Acceptable Answers	Reject	Mark
	adrenaline / insulin / testosterone / progesterone / oestrogen; adrenal glands / pancreas / testes / ovaries; increase heart rate ;		(3)

Question Number	Question		
4	(d)		
	Acceptable Answers	Reject	Mark
	Two from: grow; towards light / positive; phototropism; auxin;		(2)

Total 11 marks

Question Number	Question		
5	(a)		
	Acceptable Answers	Reject	Mark
	Three from: kill; pests / insects / organisms; less damage / less crop eaten; better yield / eq;		(3)

Question Number	Question		
5	(b)		
	Acceptable Answers	Reject	Mark
	(i) suitable example; target organism;		2
	(ii) Two from: specific / does not affect other organisms / eq.; does not need to be reapplied; does not pollute / not poisonous;		2
			(4)

Question Number	Question		
5	(c)		
	Acceptable Answers	Reject	Mark
	resistance to pests / eq.;		(1)

Total 8 marks

Question Number	Question		
6	(a)		
	Acceptable Answers	Reject	Mark
	C; B; A;		(3)

Question Number	Question		
6	(b)		
	Acceptable Answers	Reject	Mark
	(i) alveoli; capillaries / blood;		2
	(ii) water; capillaries / blood;		2
			(4)

Total 7 marks

Question Number	Question		
7	(a)		
	Acceptable Answers	Reject	Mark
	(i) periwinkle/(bank) vole;		1
	(ii) sun / light;		1
			(2)

Question Number	Question		
7	(b)		
	Acceptable Answers	Reject	Mark
	4 links / eq, e.g. longer/more organisms/more consumers/ref tertiary consumer; they do not start with a producer / start with dead organisms;		(2)

Question Number	Question		
7	(c)		
	Acceptable Answers	Reject	Mark
	bacteria; fungi;		2
			(2)

Total 6 marks

Question Number	Question		
8	(a)		
	Acceptable Answers	Reject	Mark
	lens;		(1)
8	(b)		
	Acceptable Answers	Reject	Mark
	(i) light doesn't pass through easily / is scattered / eq; not focussed / not on retina / eq.;		2
	(ii) Nn and nn; N n and n n; Nn Nn nn nn; cloudy clear;		4
			(6)

Total 7 marks

Question Number	Question	
9	(a)	
	Acceptable Answers	Mark
	A nucleus; genetic material/control cell activities; B cytoplasm; chemical reactions/metabolism/respiration/eq;	(4)

Question Number	Question	
9	(b)	
	Acceptable Answers	Reject Mark
	digested / killed / destroyed / eq; enzymes / named enzyme;	(2)

Question Number	Question	
9	(c)	
	Acceptable Answers	Reject Mark
	50%; (one mark for 3500 in working)	(2)

Total 8 marks

Question Number	Question															
10																
	Acceptable Answers	Mark														
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Total 4 marks

