

Environmental and Land Based Science

General Certificate of Secondary Education

Unit **B681/01/03** Management of the Natural Environment (Foundation Tier)

Mark Scheme for June 2013

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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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For answers marked by levels of response:

- Read through the whole answer from start to finish**
- Decide the level that best fits** the answer – match the quality of the answer to the closest level descriptor
- To determine the mark within the level**, consider the following:

Descriptor	Award mark
A good match to the level descriptor	The higher mark in the level
Just matches the level descriptor	The lower mark in the level

- Use the **L1**, **L2**, **L3** annotations in Scoris to show your decision; do not use ticks.
 - Quality of Written Communication skills assessed in 6-mark extended writing questions include:
 - appropriate use of correct scientific terms
 - spelling, punctuation and grammar
 - developing a structured, persuasive argument
 - selecting and using evidence to support an argument
 - considering different sides of a debate in a balanced way
 - logical sequencing.














Annotations

Used in the detailed Mark Scheme:

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
(1)	separates marking points
not/reject	answers which are not worthy of credit
ignore	statements which are irrelevant - applies to neutral answers
allow/accept	answers that can be accepted
(words)	words which are not essential to gain credit
words	underlined words must be present in answer to score a mark
ecf	error carried forward

AW/owtte	alternative wording
ORA	or reverse argument

Available in scoris to annotate scripts

Annotation	Meaning
	indicate uncertainty or ambiguity
	benefit of doubt
	contradiction
	incorrect response
	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
	no benefit of doubt
	reject
	correct response
	draw attention to particular part of candidate's response
	information omitted

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.
<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>

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 should be blank (or have indication of choice crossed out).

Edinburgh			✓			✓			✓		✓		✓
Manchester	✓	x	✓	✓									✓
Paris				✓	✓				✓		✓		✓
Southampton	✓	x		✓					✓		✓		✓
Score:	2	2	1	1	1	1	1	1	0	0	0	0	NR

Question	CBT	Answer	Mark	Guidance
1	1	easier to manage uses less space	2	
2	2	any two from: cover areas with fewer passes (owtte) – quicker/faster; less compaction in the rest of field; reduction in manpower needed/less labour; more powerful in order to pull big sprayers	2	ignore “better/easier/efficient” without clarification and unqualified reference to cost accept cost if qualified Traverse difficult terrain
3	3	B There is less dependent on other sources of water	1	
4	4	A add nitrogen to the soil	1	
5	5	B free draining	1	
	5	D be sticky	1	
(b)	5	A to increase the calcium available to the plants	1	

Question	CBT	Answer	Mark	Guidance
6	6	<p>solar: <u>disadvantage:</u> visual impact/reduction in land for crops; <u>advantage:</u> use of sloping sites not suitable for crops; fuel crops: <u>disadvantage:</u> reduction in food crops; <u>advantage:</u> profitable use of land; water: <u>disadvantage:</u> restrictions on siting/high set up costs; <u>advantage:</u> water can be used for other purposes on the farm;</p>	3	<p>one disadvantage and one advantage for each mark. 1 mark for three correct advantages or disadvantages accept other valid answers/habitat destruction.</p> <p>NOT can dry up etc</p>
7	7	<p>promoting the use of rare breed meat; keeping records of native farm animals</p>	2	
8	8	<p>any two from: Adapted mouthparts; colour/camouflage; small (size)</p>	2	<p>accept: other valid responses which are descriptive of specific adaptations eg wings re mobility if well described. rapid breeding cycle; live on underside away from predators.</p>
9	9	<p>any three from: more habitats (owtte); longer breeding season; fewer winter deaths; more food; migration in the UK</p>	3	<p>accept new predators</p>

Question	CBT	Answer	Mark	Guidance
10 (a) (i)	10	B 900	1	
		B 100	1	
(b)	11	cultivated land is disturbed more regularly/injures worms; changes to availability of organic/decaying matter; worms easier to spot by predators in cultivated land; fewer breeding sites;	2	accept generic comment to change in habitat for 1 mark; more pesticides/chemicals
(c)	11	any three from: reduced aeration/poor root structure; reduced drainage; reduction in organic matter in the soil; poor mixing of the soil	3	accept changes to other organism numbers which feed on the worms.
11	12	X in bottom left box	1	
12	13	the beetles will not remain still; cost/time effectiveness; reduction in disturbance to habitat;	2	NOT more accurate
13	14	A compete for water	1	
14 (a)	15	fair-trade	1	
(b)	15	42%	1	accept answers between 42.36 to 42.4%

Question	CBT	Answer	Mark	Guidance
14 (c)	16	<p>Level 3 (5–6 marks) Describes the main trends giving logical suggestions for these trends. Quality of written communication does not impede communication of the science at this level.</p> <p>Level 2 (3–4 marks) Describes the main trends giving limited suggestions for these trends or limited trends described with logical suggestions for these trends. Quality of written communication partly impedes communication of the science at this level.</p> <p>Level 1 (1–2 marks) Describes a trend with an attempted suggestion or describes main trends with no suggestions. Quality of written communication impedes communication of the science at this level.</p> <p>Level 0 (0 marks) Insufficient or irrelevant science. Answer not worthy of credit.</p>	6	<p>This question is targeted at grades up to E</p> <p>Relevant points include: Increase in sales relates to most categories Reasons: increased awareness, better availability, better marketing Farmers' markets sales have remained static Reasons: poor marketing, lack of suitable sites, demand already met, no extra supply, cost, goods available elsewhere. Sales of organic produce reduced Reasons: fewer people buying as cost increases, prices have reduced, Sales of fair-trade increased Reasons: awareness and opportunities to buy Sales of eggs have increased Reasons: fewer hens kept in cages, public awareness, more free range eggs on the market Sales of free range chicken have increased and then levelled off Reasons: Demand has been met, lack of publicity, economic factors Sales of sustainable fish have increased Reasons: health, more fish farms, awareness, price, availability</p>

Question	CBT	Answer	Mark	Guidance
15	17	<p>Level 3 (5–6 marks) Comprehensive account describing the stages in doing a risk assessment with reference to hazards associated with mowing. Quality of written communication does not impede communication of the science at this level.</p> <p>Level 2 (3–4 marks) An account describing some stages in doing a risk assessment with reference to hazards associated with mowing. Quality of written communication partly impedes communication of the science at this level.</p> <p>Level 1 (1–2 marks) An outline account describing some stages in doing a risk assessment with limited reference to hazards associated with mowing. The hazards associated with mowing. Quality of written communication impedes communication of the science at this level.</p> <p>Level 0 (0 marks) Insufficient or irrelevant science. Answer not worthy of credit.</p>	6	<p>Relevant points include:</p> <p>This question is targeted at grades up to C</p> <p>Identify the hazards/what are the hazards? injury from machinery (electrical or mechanical), hidden objects, trip hazards, noise</p> <p>Decide who might be harmed operator, bystander, wildlife</p> <p>Evaluate/quantify the risk</p> <p>Decide on the precautions needed (linked to hazards)</p> <p>Record your findings and implement them</p> <ul style="list-style-type: none"> • tell others • suggestion of items related to the task <p>Review your finding and update where needed. Check to make sure that new problems have not been created</p>

Question	CBT	Answer	Mark	Guidance
16	18	<p>Level 3 (5–6 marks) Describes the key stages and explain how the processes contribute to the formation of coastlines. Quality of written communication does not impede communication of the science at this level.</p> <p>Level 2 (3–4 marks) Identify some of the key stages and explain how they contribute to the formation of coastlines. Quality of written communication partly impedes communication of the science at this level.</p> <p>Level 1 (1–2 marks) Identify some processes that contribute to the formation of coastlines. Quality of written communication impedes communication of the science at this level.</p> <p>Level 0 (0 marks) Insufficient or irrelevant science. Answer not worthy of credit.</p>	6	<p>This question is targeted at grades up to E</p> <p>Relevant points include:</p> <p>Weathering:</p> <ul style="list-style-type: none"> wind rain water chemical physical biological <p>Erosion:</p> <ul style="list-style-type: none"> wave action river action wind action (blowing away) <p>Deposition:</p> <ul style="list-style-type: none"> washing of debris on the shore long shore drift build up of sand dunes formation of salt marshes
		Paper Total	50	

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