

# **Environmental and Land-based Science**

General Certificate of Secondary Education

Unit **B492/02**: Amenity Horticulture (Higher Tier)

## **Mark Scheme for January 2012**

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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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## Annotations

Used in the detailed Mark Scheme:

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
(1)	separates marking points
<b>not/reject</b>	answers which are not worthy of credit
<b>ignore</b>	statements which are irrelevant - applies to neutral answers
<b>allow/accept</b>	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

	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.

Eg

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

Put ticks (✓) in the two correct boxes.

✗
✗

This would be worth 1 mark.

Put ticks (✓) in the two correct boxes.

✓
✗

This would be worth 0 marks.

Put ticks (✓) in the two correct boxes.

✗
✗
✓
✓

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, eg 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, eg 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.

Eg If a question requires candidates to identify a city in England, then in the boxes

<b>Edinburgh</b>	
<b>Manchester</b>	
<b>Paris</b>	
<b>Southampton</b>	

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).

<b>Edinburgh</b>			✓			✓	✓	✓	✓	
<b>Manchester</b>	✓	x	✓	✓	✓				✓	
<b>Paris</b>				✓	✓		✓	✓	✓	
<b>Southampton</b>	✓	x		✓		✓	✓		✓	
<b>Score:</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>NR</b>

Question		CBT	Answer	Marks	Guidance								
1		1	D time – a quicker result is achieved	1									
2		2	B prevents damage from excessive current flow	1									
3		3	A high light levels and high temperature	1									
4		4	A A growing 'blueprint' (schedule) can be followed very closely. E Staff do not need to work as many anti-social hours.	2									
5		5	B increases temperature around crop C inexpensive to cover large areas D prevents some plant pests from getting to the crop	3									
6		6	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">soil-based potting compost</th> <th style="text-align: center;">peat-based potting compost</th> </tr> </thead> <tbody> <tr> <td>the heavier compost when it is wet</td> <td>the more difficult to wet when it is dry</td> </tr> <tr> <td></td> <td>lighter compost to carry</td> </tr> <tr> <td></td> <td>the better compost for hanging baskets</td> </tr> </tbody> </table>	soil-based potting compost	peat-based potting compost	the heavier compost when it is wet	the more difficult to wet when it is dry		lighter compost to carry		the better compost for hanging baskets	2	all correct : 2 marks  2 or 3 correct : 1 mark
soil-based potting compost	peat-based potting compost												
the heavier compost when it is wet	the more difficult to wet when it is dry												
	lighter compost to carry												
	the better compost for hanging baskets												
7		7	<b>2 from:</b> peg down runner/plantlet in soil or pot of compost; allow to root; cut away from main/mother plant	2									
8		8	<b>two from:</b> stronger; less maintenance; less likely to rot; better light transmission/thinner frame; can be bent into a variety of shapes	2									

Question		CBT	Answer	Marks	Guidance
9		9	environmental issues/destruction of habitat; peat is a non-renewable resource; legislation (or fear of) to ban peat use; reference to ethics	2	
10		10	fallen logs/trip hazard/plastic bag; sharp tools/personal injury; loose clothing/inappropriate clothing; heavy items; eye injury; poisonous sap	3	<b>reject</b> generalised comments  note: question relates to hazards not solutions
11		11	<b>two from:</b> (soil) pH; moisture content/drainage; nutrient levels; shade/sun/aspect	2	<b>allow</b> pests & diseases (deer/rabbits) <b>allow</b> perennial weeds
12	(a)	12	£10 250	1	<b>reject</b> responses without units <b>accept</b> 1025000p
	(b)	12	weed growth affects the quality of the crop/trees need to be well evenly shaped	1	<b>accept</b> pests and diseases
13	(a)	13	use a mixture of glufosinate ammonium and paraquat; between them they provide control of all the weed species	2	1 mark for each but must include reason
	(b)	14	ground elder: moderately susceptible white dead nettle: susceptible	3	1 mark for each conclusion 1 mark additional mark for good reasoning
14		15	garden centres and nurseries are specialist whereas supermarkets are not; supermarkets will stock other more profitable items in other months	2	<b>reject</b> generalised comments

Question		CBT	Answer	Marks	Guidance
15		16	<b>three from:</b> identification of hazards; assessment of risk (calculation of likelihood); evaluation of current practice; recommendation of improved practice/reduction of risk; prioritisation	3	free response answer
16		17	impact on non-target species/environment/chemical has greater impact; biological control leaves no chemical residues in the plant; pesticide resistance; operator does not need to undertake a spray certificate to apply with biological controls; less risk of spillage/storage of toxic chemicals with biological: control is quicker/more efficient with chemicals; chemicals are always available; spectrum of control/biological control has a narrower spectrum	3	
<b>Total</b>				<b>36</b>	



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