

**Environmental and Land-based Science**

General Certificate of Secondary Education

Unit **B492/02/04**: Amenity Horticulture (Higher Tier)

**Mark Scheme for June 2012**

---

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, OCR Nationals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support which keep pace with the changing needs of today's society.

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.

© OCR 2012

Any enquiries about publications should be addressed to:

OCR Publications  
PO Box 5050  
Annesley  
NOTTINGHAM  
NG15 0DL









Telephone: 0870 770 6622  
Facsimile: 01223 552610  
E-mail: [publications@ocr.org.uk](mailto:publications@ocr.org.uk)






## 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.

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

This would be worth 1 mark.

Put ticks (✓) in the two correct boxes.

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

This would be worth 0 marks.

Put ticks (✓) in the two correct boxes.

<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.

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.

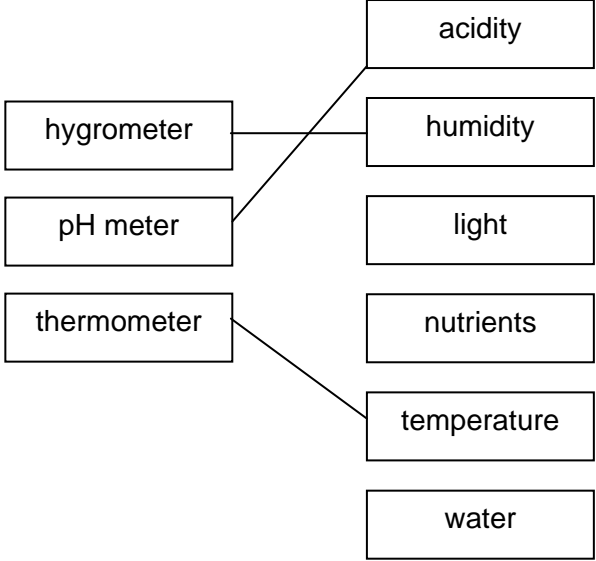
E.g. If a question requires candidates to identify a city in England, then in the boxes

<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	Mark	Guidance										
1		1	B; repeat flowering	1											
2		2	<table border="1"> <tr> <td>allows plants to get water</td> <td></td> </tr> <tr> <td>better drainage for the roots</td> <td></td> </tr> <tr> <td>greater availability of nutrients</td> <td>✓</td> </tr> <tr> <td>more room for root development</td> <td>✓</td> </tr> <tr> <td>reduces pests and diseases</td> <td></td> </tr> </table>	allows plants to get water		better drainage for the roots		greater availability of nutrients	✓	more room for root development	✓	reduces pests and diseases		2	
allows plants to get water															
better drainage for the roots															
greater availability of nutrients	✓														
more room for root development	✓														
reduces pests and diseases															
3		3	<table border="1"> <tr> <td>cheaper to buy</td> <td></td> </tr> <tr> <td>better insulation properties</td> <td>✓</td> </tr> <tr> <td>better light transmission</td> <td></td> </tr> <tr> <td>easily portable</td> <td></td> </tr> <tr> <td>less likely to blow away</td> <td>✓</td> </tr> </table>	cheaper to buy		better insulation properties	✓	better light transmission		easily portable		less likely to blow away	✓	2	
cheaper to buy															
better insulation properties	✓														
better light transmission															
easily portable															
less likely to blow away	✓														
4		4	A; faster breeding process	1											

Question	CBT	Answer	Mark	Guidance
5	5	 <pre> graph LR     H[hygrometer] --- Hum[humidity]     P[pH meter] --- A[acidity]     P --- L[light]     T[thermometer] --- Temp[temperature]             </pre>	3	
6	6	<b>B;</b> hard wearing	1	
7	7	<b>one from:</b> hoe; digging/ spade; ploughing; rotovating; chain harrow	1	<b>allow</b> trowel/ fork <b>allow</b> strimmer/ scythe
8	8	<b>advantage</b> cheaper to purchase; easier to maintain; no need to top up fuel; easy to start <b>disadvantage</b> risk of cutting cable/ electrocution; cannot use in rain; needs a mains socket; cannot mow large areas	2	1 mark for advantage  1 mark for disadvantage

Question		CBT	Answer	Mark	Guidance
9		9	<b>two from:</b> coir/ coconut fibre; soil/ loam; composted garden waste; wood fibre; rockwool	2	<b>allow</b> garden compost
10		10	raise the height of the cut; remove spacers between blade and body	2	
11		11	<b>one from:</b> silver birch; beech; mountain ash; Gleditsia; flowering cherry; Fastigate hornbeam; common plane; sycamore; maple; small leaved lime	1	common or Latin name acceptable  <b>accept</b> any medium to large tree which does not produce large fruits or sticky deposits  <b>reject</b> fir tree or general reference to conifer
12		12	<b>two from:</b> prevent overcrowding of branches; improve flowering/ fruit; reduction/ prevention of pests/ diseases- plant health; encouragement of new growth	2	<b>accept</b> access for machinery closer to plant
13		13	<b>two from:</b> better light transmission (because more glass, less frame); does not rot/ lower maintenance; lightweight; can be shaped easily; less expensive	2	
14		14	<b>two from:</b> cost of production lower – plants can be grown outside; lots of flowers available at that time reducing the price; demand for flowers may be lower	2	<b>accept</b> end of growing season  <b>accept</b> people have daffodils in their own gardens



Question		CBT	Answer	Mark	Guidance
15	(a)	15	2.8cm	1	
	(b)	15	betta at 96ppm	1	both chemical and rate needed for mark
	(c)	16	the longer the time to flowering: the shorter the shoot length; the better the flower quality	2	converse argument will also score marks
16		17	closer monitoring of the environment to keep optimum conditions/ temperature; use of ICT reduces the labour input; ICT can be predictive to future conditions	3	<b>accept</b> use less energy; efficiency of monitoring  one point well explained = 2 marks
17		18	<b>two from:</b> people cannot see what they are buying; older people buy plants and are less computer literate; plants difficult to transport; many items bought on impulse; plants are large and bulky	3	
18		19	either lift bulb; remove daughter (side) bulb; replant separately or lift bulb; cut bulb into wedges through basal plate	2	<b>accept</b> description of micro-propagation/ tissue culture
<b>Total</b>				<b>36</b>	

**OCR (Oxford Cambridge and RSA Examinations)**  
1 Hills Road  
Cambridge  
CB1 2EU

**OCR Customer Contact Centre**

**Education and Learning**

Telephone: 01223 553998

Facsimile: 01223 552627

Email: [general.qualifications@ocr.org.uk](mailto:general.qualifications@ocr.org.uk)

**[www.ocr.org.uk](http://www.ocr.org.uk)**

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations  
is a Company Limited by Guarantee  
Registered in England  
Registered Office; 1 Hills Road, Cambridge, CB1 2EU  
Registered Company Number: 3484466  
OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations)  
Head office  
Telephone: 01223 552552  
Facsimile: 01223 552553

© OCR 2012

