

Environmental and Land-based Science

General Certificate of Secondary Education

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

Mark Scheme for January 2011

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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.

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1. Abbreviations, annotations and conventions used in the detailed Mark Scheme.

- / = alternative and acceptable answers for the same marking point
- (1)** = separates marking points
- not** = answers which are not worthy of credit
- reject** = answers which are not worthy of credit
- ignore** = statements which are irrelevant
- allow** = answers that can be accepted
- () = words which are not essential to gain credit
- = underlined words must be present in answer to score a mark
- ecf = error carried forward
- AW = alternative wording
- ora = or reverse argument
- OWTTE = or words to that effect

Question	Expected Answers	Marks	Additional Guidance
1	B- Cultural: hoe between the plants	1	
2	B- Improved fuel efficiency due to better environmental monitoring; E- Reduction in payments for evenings and weekend working	2	
3	C- Soil based	1	
4	Dig over soil Remove perennial weeds (given) Apply a granular fertiliser Rake the soil so it is level Lay turf in a 'brickwork' pattern Water during dry spells	3	All 5 correct for 3 marks 3 correct for 2 marks 2 correct for 1 mark
5	A- Application of chemicals would need to be carefully managed; C- The environmental conditions will need to be adapted	2	
6	High light levels; Optimum growing temperature; Good moisture and/or nutrient levels	3	Allow: concept of CO ₂ being a limiting factor. Reject: generalist comments such as "water, light"
7	If too low: bare patches/ moss/ weak grass	1	Reject: kills grass
8	Advantages: (one from) less risk of cutting cable/ can be used away from buildings (portable)/ less risk of electrocution. Disadvantages: (one from) heavier/ petrol is flammable/ need to be refuelled/ Petrol fumes are polluting/ more expensive to purchase	2	One mark for advantage, one for disadvantage. Allow: no wires/ no need for leads Reject: Quicker; does a better job Reject 'expensive' without clarification Allow: noisy; costs more to run

Question		Expected Answers	Marks	Additional Guidance
9		Middle top image	1	
10		3 from: reduction in size; improvement to shape of plant; removal of dead/ diseased; damaged wood; improvement of flower quantity/ quality/size; reduction in pest or disease incidence.	3	
11		2 from: Qualified reference to competition: space; nutrients; light; diseases spreading; shape development	2	Reject: plants will have no air Reject: seedlings will strangle each other (OWTTE)
12	a	Excalibur;	1	
	b	Arthur	1	
	c	Valiant	1	
	d	Valiant ; Lancelot	2	
13	a	Thinner glass means less weight on structure	1	Allow: simply "it is thinner" Allow: lighter weight means less transport costs Allow: thinner means better light transmission
13	b	Less likely to break/ flexible; Better insulation properties	1	Allow: easier to cut
14		Environmentalist: destruction of important habitat; a finite resource; takes centuries to form/ renew devastated areas; other materials available Horticulturalist: Uniform ingredient; alternatives unreliable; some alternatives take large amounts of energy to process or transport; peat is pest/weed free; horticulture only uses a small percentage of peat usage;	3	Quality of response needs to reflect grade. No mark for stating position. Reject: any notion that peat is nutrient rich.

Question	Expected Answers	Marks	Additional Guidance
15	(2 from) : less chemical residues; specific to pest/disease/ does not harm beneficial organisms; biological agent may remain living around the crop for continued control	2	Reject: "natural" without qualification Reject: "cheaper"
16	3 points from: Advantages: reduced overheads to supplier thus competitive prices; stock can be stored on the nursery/ more effective pre-sale care; large potential market. Can take orders 24 hours a day. Disadvantages: Not all consumers are IT literate; customers like to see the plant they are buying/ plants are not uniform; plants difficult/ expensive to transport; buying plants is a leisure experience; potentially poorer customer service.	3	Must include at least one advantage and one disadvantage, Ignore issues relating to fraud. Allow: making money out of post and packing. NOTE: question relates to the SELLER not the BUYER- so should be marked accordingly.
	Total	36	

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