OCR
Oxford Cambridge and RSA

GCSE

Environmental and Land Based Science

Unit **B683/01**: Commercial Horticulture, Agriculture and Livestock Husbandry (Foundation Tier)

General Certificate of Secondary Education

Mark Scheme for June 2016

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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.

Expected Answers			Marks	Additional Guidance
1	**(a)**	Marigold **C** Lobelia **D** Fuchsia **A** Pelargonium **B**	3	3/4 correct = 3 marks 2 correct = 2 marks 1 correct 1 mark
1	**(b)**	Marigold **C**	1	
1	**(c)**	**Any 4 from:** Clean tub Add stones/broken tile to aid drainage Mention of compost/sterile soil Break up lumps (Slow release) fertilizer Water retaining gel Description of how the plants are inserted Spacing/pot size Which plants on the outside Which plants in the centre Complementary colours Watering	4	
1	**(d)**	£412.50	2	£16.50 (1 mark)
2	**(a)**	Annual Perennial Biennial	2	All correct = 2 marks 1 or 2 correct + 1 mark
2	**(b)**	1 mark per correct example of each	3	
2	**(c)**	Deciduous trees lose their leaves in winter while evergreens do not.	1	
3	**(a)**	South	1	
3	**(b)**	300 m^2	2	2000m^2 1 mark

Expected Answers			Marks	Additional Guidance
4		**[Level 3]** A good description of some of the mechanisms of asexual propagation together with a named example of each, **OR** a detailed scientific description of selected examples. Quality of written communication of the science at this level. (5 – 6 marks) **[Level 2]** A description of the mechanisms of asexual reproduction with some named examples. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Names some of the mechanisms of asexual propagation with a named example. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	**This question is targeted at grades up to C** **Indicative scientific points may include:** • Runners are **above ground stems** from which a plantlet grows and develop roots. When the plantlet is large enough it separates from the parent produces a clone. • Strawberry and spider plants produce runners. • Rhizomes are **below ground stems** from which a new plant grows. • Ginger, grasses such as couch and iris produce rhizomes. • Tubers are **swollen, underground stems or roots** that store food, the stored food is used to produce new growth from buds. • Dahlia produces root tubers. • Corms are (vertical) swollen underground plant stems that store food over winter ready for growth in spring. • Gladiolus and crocus are corms. • Bulbs are short underground stems with swollen leaves that store food. • Daffodil and onion are bulbs. • Tissue culture • Cuttings – root, stem, bud **Use the L1, L2, L3 annotations in RM Assessor; do not use ticks.**

Expected Answers			Marks	Additional Guidance
5(a)		**Any 2 from** Bright eyes, pricked ears, alert, clean, trying to suckle, lick marks on coat	2	Accept things not seen in the picture
5(b)		**D** - enough food, enough water and a healthy environment	1	
5(c)		**[Level 3]** Describes in detail the characteristics of good animal housing and explains how different housing types meet the needs of different animals. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Describes, with some omissions, the characteristics of good animal housing and describes how different housing types meet the needs of different animals. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Names characteristics of good animal housing. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	This question is targeted at grades up to E Indicative scientific points may include: **Housing needs to be** • clean • dry • draught free • well ventilated • appropriate light levels • warm • stimulating • appropriate size • safe • access to clean water **Animal needs** • Types of housing appropriate for the classes of livestock • Types of housing appropriate for the age of animals • Difference of intensive/extensive housing Use the L1, L2, L3 annotations in RM Assessor; do not use ticks.

Expected Answers			Marks	Additional Guidance
6(a)		Clockwise from left: vagina uterus ovary oviduct	4	

Expected Answers			Marks	Additional Guidance
6(b)		**[Level 3]** Explains the processes involved in the stages of mating, fertilization, development and birth of a mammal. Quality of written communication does not impede communication of the science at this level. (5 – 6 marks) **[Level 2]** Describes at least two of the stages of mating fertilization, development and birth of a mammal. Quality of written communication partly impedes communication of the science at this level. (3 – 4 marks) **[Level 1]** Describes some aspects of mating fertilization, development or birth of a mammal. Quality of written communication impedes communication of the science at this level. (1 – 2 marks) **[Level 0]** Insufficient or irrelevant science. Answer not worthy of credit. (0 marks)	6	This question is targeted at grades up to C Indicative scientific points may include: • The need for mammals on the farm to be on heat for mating to take place • The signs that the chosen animal is on heat. • The process of mating • Human intervention in mating eg AI • The movement of sperm following insemination towards the egg • The entry of sperm into the egg • The process of fertilization • An outline of the changes from fertilized cell to embryo and foetus. • Gestation period for the chosen animal • The changes in the mother and baby in the hours before birth • Description of the actual process of birth • Role of the farmer in the birthing process Use the L1, L2, L3 annotations in RM Assessor; do not use ticks.

Expected Answers			Marks	Additional Guidance
7(a)		Mastitis	1	
7(b)		£52	1	+/- £2
7(c)		£4928	1	
7(d)		**Any three from:** The profit margins are low per litre of milk Any loss of yield - significant impact on profitability. treatment impacts on profitability Any appropriate use of the data e.g. one case of mastitis reduces the profit from £400 to £318 (about 20%)	3	
		Total	**50**	

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