



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2017/2018

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR
THE DEGREE OF BACHELOR OF SCIENCE IN
HORTICULTURE WITH INFORMATION TECHNOLOGY**

MAIN CAMPUS

AHC 402: FLORICULTURE II

Date: 14th February, 2018

Time: 3.30 - 6.30pm

INSTRUCTIONS:

- Answer ALL Questions in Section A and any other TWO in Section B.



Section A (50 marks)

Q1.

- a). Define the following terms as used in cut rose (*Rosa hybrida*).
- (i) Commercial cut flower roses. (2 marks)
 - (ii) Double breaks. (2 marks)
 - (iii) Stenting form of grafting. (2 marks)
- b). Cut rose (*Rosa hybrida*) is generally harvested just above the first five leaflet compound leaf from the point of origin of the shoot. Highlight any four (4) instances when the shoot may be harvested higher up than this. (4 marks)
- c). Critically comment on the following practices/observations in cut rose (*Rosa hybrida*) production.
- (i) Shoots for use as budsticks in budding propagation are left to mature on the plant after flowering. (2 marks)
 - (ii) Top worked propagules should not be planted with the bud/graft union under the soil. (2 marks)
 - (iii) Root Substrate/media salinity levels should be low at the time of planting. (2 marks)
 - (iv) Selection of day and night time temperatures for growing the crop is a compromise between yield and quality. (4 marks)

Q2.

Flowers are internationally traded.

- a). Why do people buy flowers? (3 marks)
- b). A new development in the international trade in cut flowers is increasingly demanding consumers. Highlight any two indicators of consumers becoming more demanding. (2 marks)
- c). In the production of cut flowers, tropical regions unlike their temperate ones, enjoy favourable natural growing conditions (do not require protection from harsh weather) which lowers their production costs. Justify the increasing production of cut flowers under greenhouses even in these tropical regions. (5 marks)

Q3.

- a). Carnations (*Diathus caryophyllus*) have a cymose inflorescence and thus can be cultivated as either standards or sprays. Distinguish between:
- (i) Standard carnations and spray carnation crops. (2 marks)
 - (ii) Disbudding standard and disbudding spray carnations. (2 marks)
- b). The standard practice is to grow standard carnations as two year crops and spray carnations as one year crops. However, in open field culture or on bare ground beds, standard carnations are also grown as one year crops. Why? (2 marks)
- c). One of the methods for pinching standard carnations is the 'double pinch'. Explain the use of this pinching method, highlighting its effects on crop timing. (4 marks)

Q4.

- a). Based on the classification of chrysanthemum (*Dendratherma grandiflora*) according to how the flower is commercially used, distinguish between the Standards and disbuds. (2 marks)
- b). Soon after establishment of the stock plants of chrysanthemum, plants are given a soft pinch to promote rapid shoot development. However, given that chrysanthemums are also propagated by rooting terminal cuttings, would it not be wise to delay the pinch until the first pinch is large enough to be used as a cutting? (4 marks)
- c). Chrysanthemums are photoperiodic plants and therefore their growth is managed by altering daylengths. The stock plants are strictly maintained under long day conditions while flowering/production plants are provided with short day conditions to induce flower production. However, even the flowering plants are initially kept under long day conditions until they attain a desired stem length. Why should these flowering plants be first grown under long day conditions? (4 marks)

Section B: Attempt any two (2) questions from this section.

Q5.

International trade in cut flower contributes to economies of the exporting countries. Governments of both the exporting and importing countries in return support the growth of this industry. Using the Kenyan case:

- a). Explain the 'role of the Kenyan government' in the cut flower industry. (6 marks)
- b). How can the governments of the importing countries support cut flower industry in Kenya? (4 marks)

Q6.

Cut carnations (*Dianthus caryophyllus*) responds to daylength/photoperiods, a condition that facilitates the manipulation of its flowering. Discuss the **photoperiodic** management of **flowering** cut carnations crops. (10 marks)

Q7.

The production of cut rose (*Rosa hybrida*) is to an extent the management of the flowering shoots. Discuss the morphology of cut rose shoots **highlighting** the significance of the various section to the management of the cut rose crop. (10 marks)