



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2016/2017**

**THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE WITH  
INFORMATION TECHNOLOGY**

**MAIN CAMPUS**

**AHC 306: FLORICULTURE I**

Date: 15<sup>th</sup> June, 2017

Time: 3.30 - 6.30pm

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**INSTRUCTIONS:**

- Answer ALL Questions in section A and any THREE in section B.



**Section A (40 marks)**

**Q1. a) Highlight:**

- (i) Any two uses of flowers in the perfume industry. **(2 marks)**

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- ~~(ii) Any two indicators of continuing growing international demand for cut flowers. **(2 marks)**~~
- (iii) Any three plant processes regulated by photoperiodism. **(3 marks)**
- (iv) The significance of the development of precooling and packaging technology to Kenya's cut flower industry. **(3 marks)**

b). Distinguish between the following terms as used in floriculture:

- i) Short day plants and quantitative short day plants. **(2 marks)**
- ii) Centralised and localised greenhouse heating systems. **(2 marks)**
- iii)  $Q_{10}$  values of three (3) and  $Q_{10}$  values of two (2). **(3 marks)**
- iv) Summer and winter greenhouse cooling systems **(3 marks)**

**Q2. a) Why:**

- i) Is maintaining elevated levels of  $CO_2$  in the greenhouse a challenge during  $CO_2$  enrichment? **(2 marks)**

- ii) Is it important to separate walks from beds in the greenhouse? **(2 marks)**
- iii) Are flowers produced under relatively cool conditions better coloured compared to those under warm conditions? **(2 marks)**
- b). Is plant growth believed to occur mostly at night? **(4 marks)**
- Q3.** High costs of heating greenhouses have necessitated instituting measures to conserve heat in the greenhouse.
- a) Outline the three (3) main ways by which heat is lost from the greenhouse. **(3 marks)**
- b) For effective heat conservation, heat sensors are installed in the greenhouse. Highlight any three (3) important considerations when placing the heat sensors in the greenhouse. **(3 marks)**
- c) How do good maintenance of heaters and thermistors help in greenhouse heat conservation? **(4 marks)**

**Section B (30 marks)**

➤ Attempt any three (3) questions from this section

- Q4.** Water though highly abundant on earth, is considered the most limiting factor to crop plants. Discuss:
- a) The watering rule 'water thoroughly each time'. **(5 marks)**
- b) The Dew-Hose<sup>®</sup> watering system for fresh flowers. **(5 marks)**
- Q5.** Heat entrapment on the greenhouse can cause its temperature to rise to levels injurious to crop plants.
- a). Why do greenhouses heat up? **(2 marks)**
- b). Explain the working of the fog evaporative cooling system? **(8 marks)**
- Q6.** Light intensity determines the rates of photosynthesis in plants. Discuss the regulation of light intensity available to crop plants in the greenhouse. **(10 marks)**

Q7. Kenya has been a leading exporter of cut flower to the European Union (EU). Basing on the “**triangle of determinants of production areas**” discuss Kenya’s suitability for cut flower production. (10 marks)

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