MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2012/2013

FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF MASTER OF SCIENCE IN HORTICULTURE (MAIN CAMPUS)

SHC 816: MANAGEMENT OF CONTAINERIZED SOILS

Date: 2nd August, 2013 *Time: 8.30 – 11.30 a.m.*

INSTRUCTIONS:

- Answer ALL questions in Section A (30 marks) and ANY TWO questions from Section B (30 marks).

Instructions: Answer ALL questions in section A (30 mks) and TWO from section B

Section A:

Q1. Explain the following terms as used in growth media management:

a) Porosity (2 mks)

b) Compaction (2 mks)

c) Cation Exchange Capacity (2 mks)

d) Drainage (2 mks)

Q2. Irrigation is a very important aspect of plant production since fertilizer and pesticide runoff are related to irrigation practices.

i) Define irrigation efficiency (3 mks)

ii) Highlight on Methods of water application (3 mks)

iii) Guidelines to Irrigation Application Amount (3 mks)

iv) Irrigation Water Quality (3 mks)

Q3. Algae is a major problem experienced by ornamental plant growers especially with medias aeration. Explain how you would advise the growers on its control (5 mks)

Q4. Why is forest soil preferred by nursery plant growers than any other media? (5 mks)

SECTION B: Answer Question 1 and ONE other from this section (30 mks)

Q1. Discuss the process of pH manipulations for soilless media for growing ornamentals such as poinsettias (*Euphorbia pulcherrima*) and New Guinea Impatiens (*Impatiens xhybrida*) (15 mks)

Q2. Explain the following with respect to nutrient management in containerized nursery system:

i) Mixing and Handling Growing Media (5 mks)

ii) Using Fertilizers (5 mks)

iii) Monitoring Nutrient Status (5 mks)

Q3. i) Soil is a reservoir for many plant pathogens and plants are under constant attack by these soilborne organisms. List three (3) common pathogens in containerized media (3 mks)

ii) Seed Treatments provide a prior solution as a 'prevention is better than cure' practice. Give at least four (4) common seed treatments/sterilizers applied for ornamentals including bulb or corms (4 mks)

iii) Briefly discuss the following treatment methods applied in containerized media production:
a) Soil Solarization (2 mks)
b) Heating (2 mks)
c) Soil Fumigation (2 mks)
d) Soil Fungicide Application (2 mks)