UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: **BACHELOR OF SCIENCE IN HORTICULTURE**

YEAR III

COURSE CODE: **HORT 302**

TITLE OF PAPER: **GREENHOUSE MANAGEMENT AND UTILIZATION**

TIME ALLOWED: **TWO (2) HOURS**

INSTRUCTION: **ANSWER ANY FOUR (4) QUESTIONS**

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR

ANSWER ANY FOUR (4) QUESTIONS

Question 1

(a) What is a greenhouse? [5 Marks]

(b) What is the purpose of establishing a greenhouse in a horticultural enterprise? [8 Marks]

(c) List the uses of a greenhouse in a horticultural enterprise? [12 Marks]

[25 marks]

Question 2

Describe how to control or manage the following factors in a greenhouse environment:

(a) Temperature [8 marks]
(b) Light [9 marks]
(c) Relative humidity [8 marks]

[25 marks]

Question 3

(a) List the different ways of disease control in a greenhouse crop environment. [5Marks]

(b) Distinguish between soil sterilization and soil pasteurization. [5Marks]

(c) List the different methods of irrigating greenhouse crops. [5Marks]

(d) How would you monitor the fertility of greenhouse crops? [5Marks]

(e) What are the factors affecting fertilizer application to greenhouse crops? [5 marks]

[25 marks]

Question 4

(a) Describe the ventilation and cooling systems of a typical greenhouse. [10 Marks]

(b) What criteria will you consider when choosing a covering for a greenhouse in your locality? [8 Marks]

(c) What do you understand by the term benching efficiency? [2 Marks]

(d) Calculate benching efficiency for a greenhouse of dimension 8.5 m by 30 m whose height is 6.0 m with eighteen benches having a dimension of 2 m X 3.5 m and a height of 1.2 m. [5 Marks]

[25 Marks]

Question 5

You have a 1:205 injector in a greenhouse fertigation equipment and want to use potassium nitrate (13%N-0%P_2O_5-44%K_2O) and calcium nitrate (15.5%N-0%P_2O_5-0%K_2O) to supply 255 ppm of N and K with each watering. How many **grams** of each fertilizer would you weigh out to make **1- liter** of concentrate? (Given %K and %P equals **1.2** and **2.3** of K_2O and P_2O_5 respectively, and **10** as the conversion constant C).

[25 Marks]