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 horticultural enterprise?

[8 Marks]

(c) Describe the criteria considered when choosing a covering for a greenhouse

[12 Marks]

[25 marks]

Question 2

(a) Explain the term benching efficiency?   [5 Marks]

(b) Calculate benching efficiency for a greenhouse of dimension 8.5 by 30 m whose height is 6.0m with eighteen benches having a dimension of 2.0 X 3.5 m and a height of 1.2m.   [8 Marks]

(c) Determine the number of lamps required to grow spinach which need 350 ft-C of light in a greenhouse measuring 20 X 50 m during the winter season. You have a Metal halide lamp (400W) with luminous flux of 36000 Lumens.
     [1 ft-C = 10.8 Lumens]   [12 Marks]

[25 marks]

Question 3

Describe the greenhouse maintenance operations you will employ as the manager of CELSIMSAM GREENHOUSE Inc. Swaziland.

[25 marks]

Question 4

Discuss the factors considered while choosing an area for a greenhouse enterprise?

[25 marks]

Question 5

You have a 1:300 injector in a greenhouse 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 325 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]